SOAP

SANITARY CHEMICALS

right

FROM THE START

The road toward finished excellence starts with raw materials that are right. Sketch shows our still room with control labs right at hand to check each run. With such control we know we're right from the start.

VAN AMERINGEN-HAEBLER, INC.

April 1941

For Repackers Who Begin With

QUALITY

In Household Cleansers, Commercial Cleansers, Soap Powders, Bath Crystal Bases, Household Bleaches, Drain Pipe Solvents, Demothing and Deodorizing Preparations, Termite Control

SOLVAY SNOWFLAKE* CRYSTALS—Pure white, crystalline sodium sesqui-carbonate, immediately and entirely soluble, always free running, Solvay Snowflake Crystals is an excellent water softener and effective soap saver.

Perfect solubility enables this mild cleanser to do its work without leaving a residue. Snowflake Crystals also makes a perfect base for bath salts.

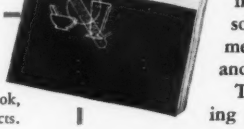
SOLVAY SPECIAL CLEANSERS — Mixtures of basic materials used in all general cleansing. Solvay manufactures a complete line of these cleansers, covering every cleansing need which can be filled by the use of milder types of alkali. The Solvay Products book, which describes these products, can be obtained from any office of the Solvay Sales Corporation.

SOLVAY SUPER ALKALIES—Solvay Super Alkalies are specially prepared mixtures of a stronger type than the Special Cleansers. These alkalies are well adapted to the heavy duty type of cleaning.

Full information will be supplied promptly upon request.

SOLVAY DETERGENT — Detergent of a special grade adapted to various kinds of scouring, is another Solvay product which is providing profitable business opportunities in private label brand.

Another field in which Solvay quality enables you to beat competition! Full information upon request.



SOLVAY SALES CORPORATION
40 Rector Street, New York, N. Y.

Gentlemen: Please send me a copy of the Solvay Products book, which gives complete information on all Solvay Products.

Name.....

Company.....

Address.....

City..... *State*..... AJ-441

SOLVAY FLUF* (58% Extra Light Soda Ash)—Fluf makes an ideal cleanser to add to your line of repackaging products. It is an extra light soda ash made especially fluffy, bulky and light by a process that is exclusive with Solvay. Its weight per cubic foot is approximately ⅔ that of regular soda ash.

Fluf is particularly valuable where maximum bulk with minimum weight is required, as in repackaging.

SOLVAY CAUSTIC SODA—*Ground* • *Powdered*—The high standard of quality which The Solvay Process Company has established in the alkali field is well exemplified in Solvay Caustic Soda—made from soda ash manufactured by the Solvay process. For the convenience of the consumer, Solvay Caustic Soda is delivered in various granulations to meet the needs of compounders.

SOLVAY PARA-DICHLOROBENZENE—Wide selection of grade sizes in Fine—Medium—Coarse—Super-Coarse Crystals—Especially well adapted to block manufacture. Solvay Para-dichlorobenzene is supplied in many carefully graded crystal forms, insuring perfect blending with colors and perfumes.

A product of exceptional purity. Delivered in a selection of packages wide enough to meet all marketing needs. Write today for prices and full information.

SOLVAY ORTHODICHLOROBENZENE—for making insecticide sprays, metal polishes and grease and tar solvents. It cuts greasy films and dissolves most metallic oxides. A clear liquor, shipped in 55 gal. drums and 5 gal. cans.

The important ingredient for the termite exterminating solutions.

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Alkalies and Chemical Products Manufactured by The Solvay Process Company

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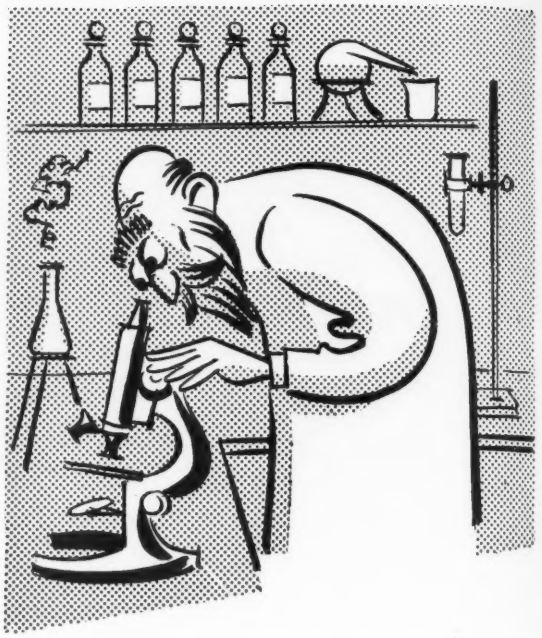

THE product must be pure, of course . . . but it must be more than that. It must have that indefinite fine-ness of quality that can only be put into it by superior workmanship. By that factor which is known in the laboratory as the "know how."

The result is greater customer appeal—a lasting quality which brings your product to the ultimate consumer at the highest point of perfection . . . with the customer appeal that creates both consciously and subconsciously the urge to again buy this product or other products from the same concern.

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Volume XVII Number 4

SOAP and SANITARY CHEMICALS

Reg. U. S. Pat. Office

APRIL
1941

SANITARY Products Section, which forms a part of every issue of SOAP, begins on page 75.

Contents

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To help you lead the vogue for New-Mown Hay odors

Albert Verley, Inc.

presents

Aldehyde Foin Coupé

The popularity of these odors makes worth while an effort to achieve special distinction for *your* version.

This is exactly what you can do with this new aromatic chemical — invaluable, as its name implies, in creating new variations of the New-Mown Hay type.

Aldehyde Foin Coupe, in fact, gives extremely interesting results in all fancy compositions, especially in those where the New-Mown Hay, Clover and Trefle note is sought.

It is very fast to alkali. Because of its tremendous power, only very small quantities are required — bringing the cost well within the soapmaker's limitations. In fact, there is no technical or practical obstacle to its immediate use — so your product may enjoy the increased acceptance it brings.

Write for working samples and prices.

★ Albert Verley
AROMATICS

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We Combined Higher Gloss With Less Slip To Open A New Era In Wax Selling

SUPER-WAX is more than a premium wax at a popular price. It gives your trade higher gloss and less slip—a combination they couldn't get before at any price.

The non-slip is built in by HYSAN'S new formula for compounding the No. 1 Yellow Prime Carnauba base. The higher gloss is the matchless product of our new quick-chill process which multiplies the number of reflecting particles.

Side by side tests on all type floors . . . prove that SUPER-WAX tops the field in selling features that count. It spreads and levels more smoothly and lays better. It's waterproof. It won't milk or smear—yet it is easily removed by any good wax remover such as our Hysolene.

BULK OR PRIVATE LABEL

We suggest that you send for a sample of SUPER-WAX and test it out on elevator floors, front entrances, etc. See for yourself what makes it "the fastest seller in floor maintenance." Meets all approved specifications. Available for private label.

CLEANERS • DISINFECTANTS • SOAPS • DEODORANTS • DEODORANT BLOCKS • INSECTICIDES • POLISHES • WAXES

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S/4/41

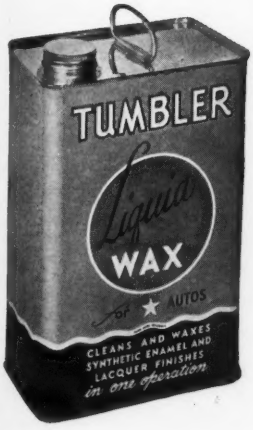
HYSAN PRODUCTS COMPANY · 2560 ARMITAGE AVENUE · CHICAGO, ILL.

A newly waxed car . . . and a spring thunderstorm. That's a combination to sadden the brightest day.

But here's what the J. A. Tumbler Laboratories of Baltimore, Md., say about their product—"Tumbler Liquid Wax leaves a hard, dry protective coating that won't rainspot".

Crown Cans provide the ideal container for Tumbler Liquid Wax —while providing perfect protection en route, on the dealers' shelves, in the home or public garage.

If you haven't "tumbled" to the added sales appeal Crown Cans will give *your* product . . . it's about time we got together.



CROWN CAN COMPANY, PHILADELPHIA, PA., *Division of Crown Cork and Seal Company,* Baltimore • St. Louis • Houston • Madison • Orlando • Fort Wayne • Nebraska City.

CROWN CAN

INDEPENDENT AND HELPFUL

Story of some white crystals in a test tube

Or How a Packaging Problem Was Solved

FOR YEARS beer drinkers had cherished a hope.

"It would be swell," they said, "if we could get rid of smelly empties . . . if we could have beer at home or to take on a picnic and not have to bother with deposits. But best of all—what a break if there were nothing to lug back to the store!"

The answer was to put beer in cans, which to us, American Can Company, seemed like a possibility.

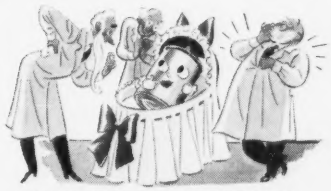
The crux of our problem, however, was to find an ideal can-lining, so that the taste and character of the beer would remain unchanged.

So back in 1933 we went to work.

We made many experiments in our laboratories. Nine hundred and forty-one to be exact. And the nine hundred and forty-second experiment hit it on the nose.

To look at, Experiment No. 942 was nothing more than some white crystals in a test tube. But a can-lining made of these crystals had a remarkable property. For the taste and character of beer from a can with this new lining were unchanged!

Beer, in other words, had been successfully packaged *for the first time.* It now came in a clean, single-service container. Here was the birth of the beer can.



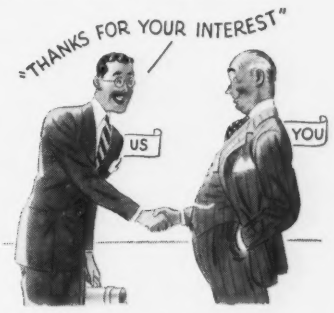
GREAT MOMENT IN PACKAGING

And now we had to have these white crystals, called "vinyl resin," not by the test tube but by the ton. And was *this* good news to a certain chemical company! For the vinyl resin we needed was something they'd never made in such large quantities before. But as an ideal lining for beer cans it was a sleeper in their line come to life.

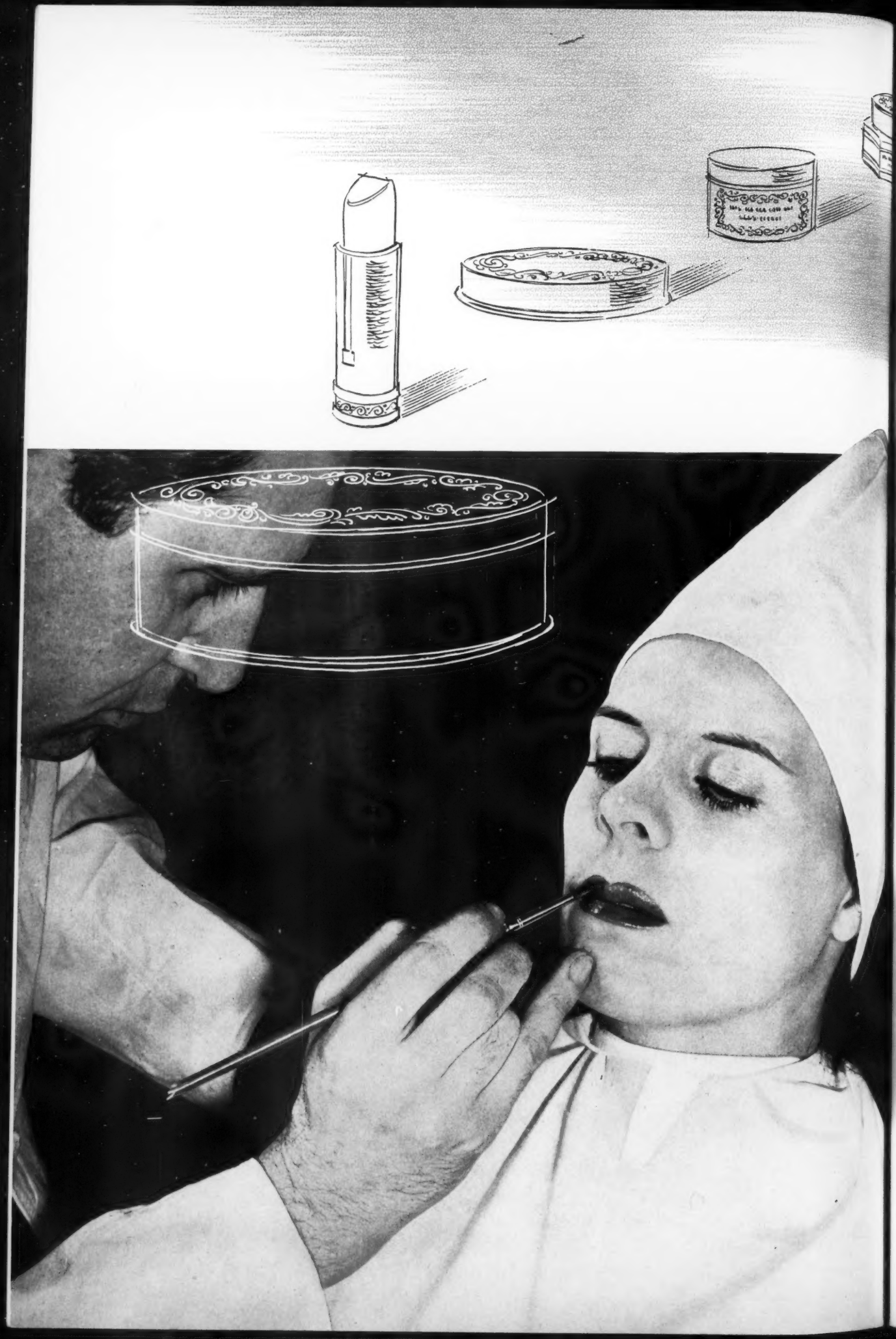
So, down to the little town of South Charleston, West Virginia, they went and invested money in a

new addition to one of their plants. More people went back to work. Retail business took a jump. Taxes came down.

Now this is a story we're mighty proud of. For to us it seems a pretty good example of the way in which most American business operates. The public wants or needs something. And the public gets it. As a result, new and more jobs are created.



We also believe that the story of vinyl resin is a good example of the way *we* solve packaging problems.



Blending for special effects

Stage... Cinema... Television... Each calls for specialized experience on the part of the make-up artist—and for an *intuitive* knowledge that will insure the desired result. So, too, the compounding of odors for perfumes and cosmetics requires not only special training, but also an instinctive knowledge of the combinations that produce successful results.

Givaudan's staff is composed of chemists and perfumers who have developed this intuitive knowledge to a high degree—as is demonstrated by their ability to create new and unusual odors—for special effects in a single product, or for use in a complete line of perfumes and cosmetic items. Givaudan's success in developing popular odors is attested by the fact that Givaudan products have been adopted by many leading manufacturers of cosmetics, who find Givaudan's knowledge of materials a constant aid in stimulating sales and in effecting production economies... If you are seeking new odor appeal for any purpose you will find Givaudan's specialized skill a source of economy and profit.

New Odors, New Scents for Fly Sprays and Insecticides

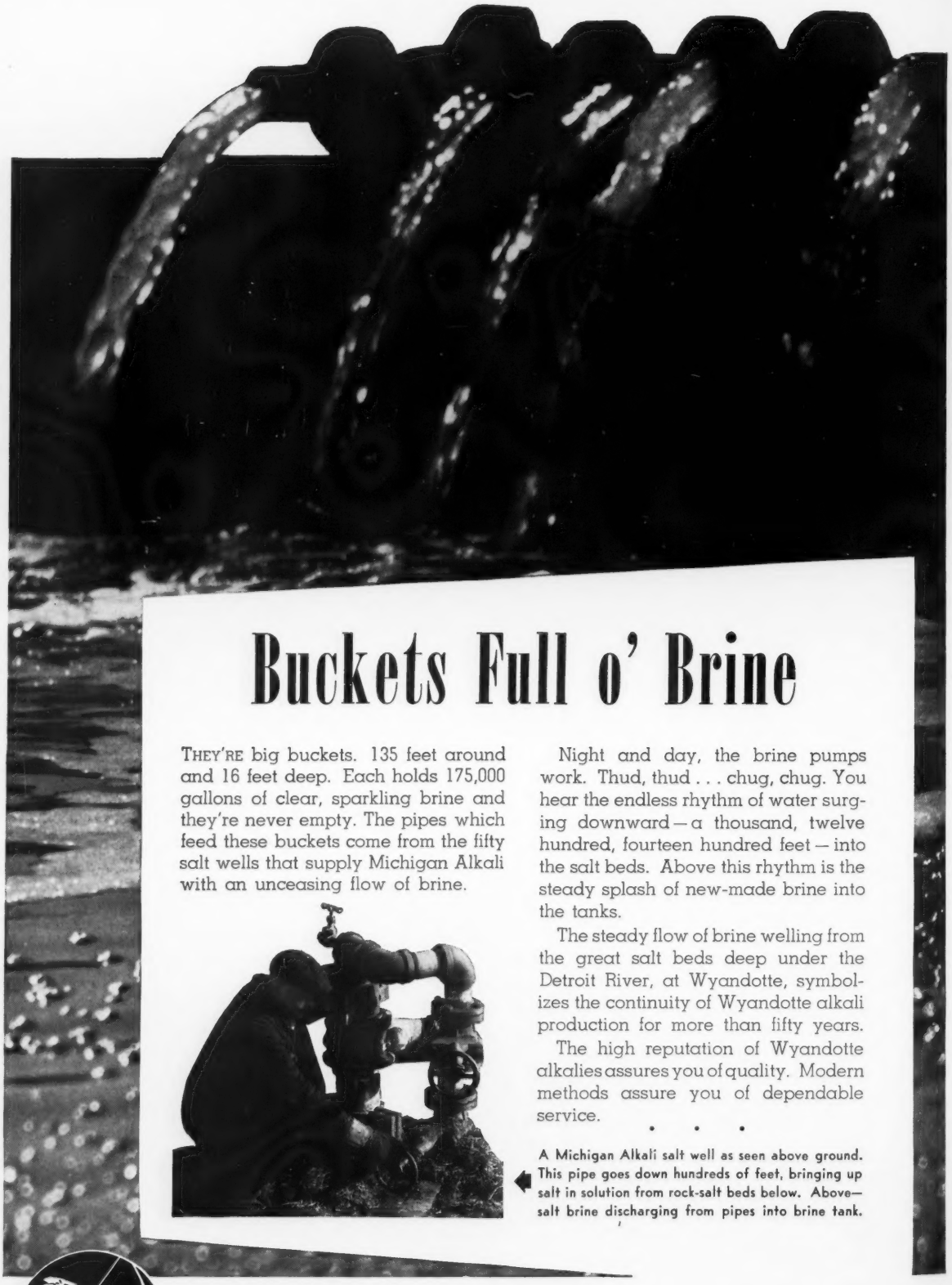
Top-flight sales appeal for many household products in the field of insecticides and fly sprays has been obtained through the use of odors compounded in the Givaudan Laboratories.

The selection of the right odor for a *particular* product—one that will insure immediate and lasting consumer acceptance—is a service in which Givaudan has had long experience.

We will welcome the opportunity to suggest a fragrance that can give individuality to *your* product. If you will send us a sample of your unperfumed spray or insecticide we will be glad to make recommendations for an odor designed to suit the requirements of your product.

GIVAUDAN-DELAWANNA, INC.

330 WEST 42ND STREET · NEW YORK, N. Y.



Buckets Full o' Brine

THEY'RE big buckets. 135 feet around and 16 feet deep. Each holds 175,000 gallons of clear, sparkling brine and they're never empty. The pipes which feed these buckets come from the fifty salt wells that supply Michigan Alkali with an unceasing flow of brine.

Night and day, the brine pumps work. Thud, thud . . . chug, chug. You hear the endless rhythm of water surging downward—a thousand, twelve hundred, fourteen hundred feet—into the salt beds. Above this rhythm is the steady splash of new-made brine into the tanks.

The steady flow of brine welling from the great salt beds deep under the Detroit River, at Wyandotte, symbolizes the continuity of Wyandotte alkali production for more than fifty years.

The high reputation of Wyandotte alkalies assures you of quality. Modern methods assure you of dependable service.

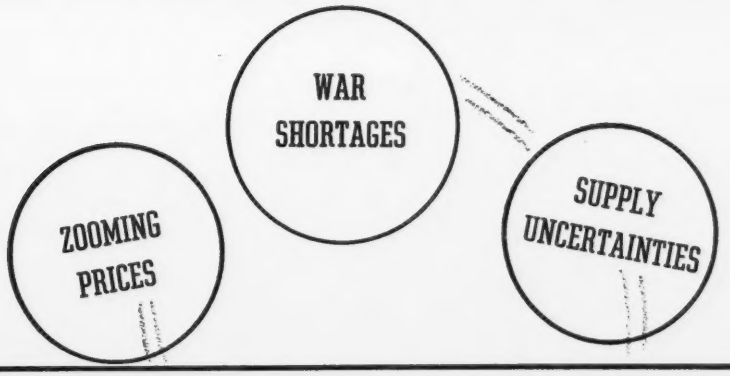
• • •

A Michigan Alkali salt well as seen above ground. This pipe goes down hundreds of feet, bringing up salt in solution from rock-salt beds below. Above—salt brine discharging from pipes into brine tank.

MICHIGAN ALKALI COMPANY

PLANTS: WYANDOTTE, MICHIGAN • *GENERAL SALES OFFICE:* 60 E. 42ND STREET, NEW YORK CITY

DISTRIBUTORS IN ALL PRINCIPAL CITIES . . . Manufacturers of: Soda Ash • Caustic Soda • Dry Ice Bicarbonate of Soda • Calcium Chloride • Liquid Chlorine • Calcium Carbonate • Coke • Cement



JUGGLING WAS NEVER MEANT FOR SOAP & INSECTICIDE MANUFACTURERS

M M & R Can Show You How To **BALANCE** *Perfuming Production Costs*

Long before the war spotlighted attention on substitutes for hard-to-obtain, price-zooming essential oils and perfume oils, M M & R was marketing quality substitutes for economy-minded soap producers and manufacturers of allied products.

In short, M M & R can show you how to balance costs without constantly resorting to production juggling.

What M M & R has to offer you are not emergency products devised in haste, but prime quality, performance-tested compounds that have and can be used for purposes of trimming costs without sacrificing quality or product identity.

By sending complete details of your requirements to our technical department, you will be advised how to use M M & R substitutes most advantageously.

NO-SPUR-OF-THE-MOMENT "WAR BABIES" *THESE!*

These substitutes closely match the general odor characteristics and salient properties of the oils they replace.

In many ways these are superior to the products they are designed to replace. All provide for considerable savings. Write for price schedule today.

FOR THIS	SUBSTITUTE THIS
OIL SASSAFRAS ARTIFICIAL	FORM-O-SASS S-O-FRASS No. 3 ANDRO M M & R
OIL CITRONELLA	JERALE M M & R CITRONELLA SUB. No. 21
OIL or CAMPHOR WATER WHITE	JAPP-O M M & R
OIL CAMPHOR SASSAFRASSY	SASS-O M M & R
OIL BERGAMOT (Hand Pressed)	BERGOMAT ARTIFICIAL
OIL NEROLI	NEROLI ARTIFICIAL
ORANGE BLOSSOM	NEROLI ARTIFICIAL
OIL OF ANISE (for technical purposes)	ANNOL

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BRINGS YOU LOWER COSTS . . . BETTER ACTION

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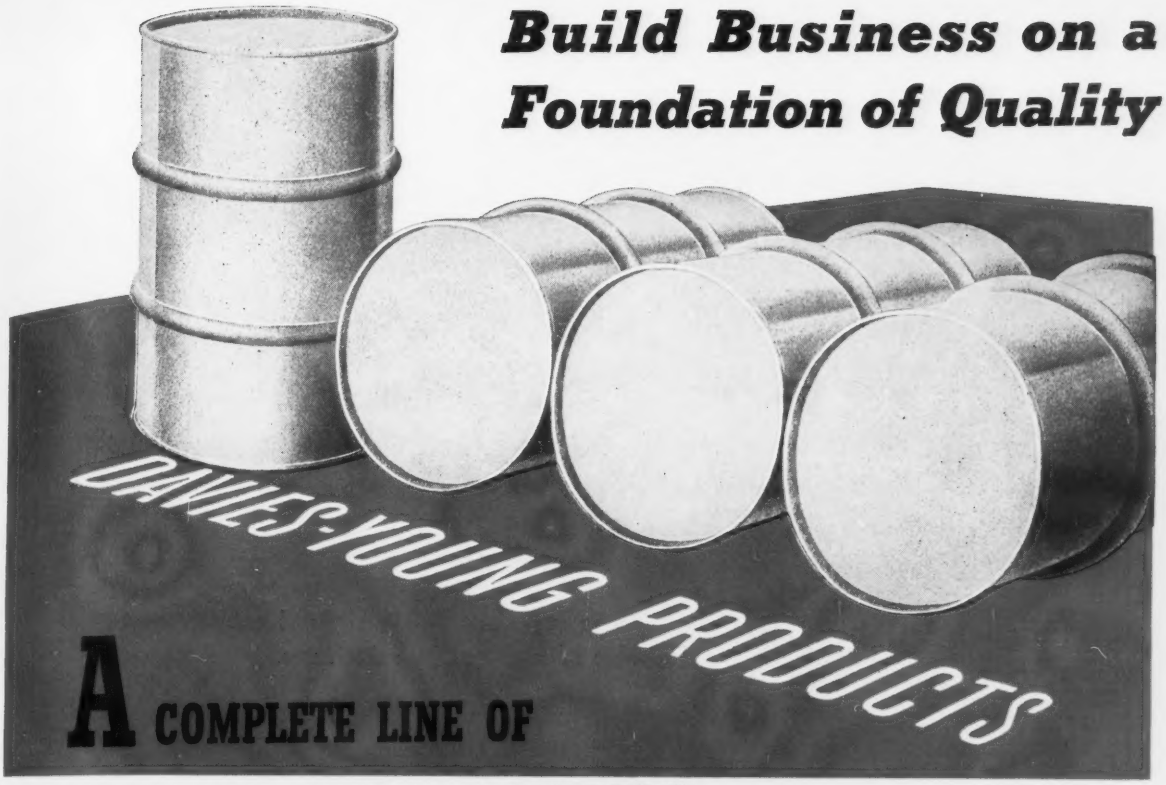
Build Business on a Foundation of Quality



A COMPLETE LINE OF SOAPS AND SANITARY SUPPLIES *FOR ALL YOUR NEEDS*

OIL SOAPS

Scrubbing soaps and cleansers made from vegetable oils, including such Special Oil Soaps as U.S.P. No. 11. Surgical Green Soap and others.

LIQUID SOAPS

Liquid (floor) scrubbing soaps, compounded for specific types of floors—Buckeye, Sani-Scrub, Florex, Ex-Alk.

LIQUID TOILET SOAPS

Neutral Soaps, made under rigid laboratory control, insuring clearness, uniform quality, uniform soap content. Line includes concentrated Liquids and Special Soaps such as Surgical Liquid, Infants, Castile and Tincture of Green Soap.

CONCENTRATED SOAP BASES

For producing Liquid Shampoos and Toilet Soaps and Liquid Scrubbing Soaps.

LIQUID FLOOR WAXES AND FINISHES

Beamax and Cirene self-polishing waxes; Buckeye Liquid Wax (requiring polishing); Paste Wax, Dance Floor Wax; Gym Finish; Floor Seal.

POLISHES

Metal Polish, Furniture Cream, Furniture Polish.

DISINFECTANTS

Pine Oil and Coal Tar Disinfectants; Cresol Compound U.S.P., and Buckeye-Cres. Deodorant Blocks and Crystals.

INSECTICIDES

Fly Sprays, Moth Sprays, Contact Insecticide and Roach Powder.

THE DAVIES-YOUNG SOAP COMPANY
DAYTON • OHIO

THE DAVIES-YOUNG SOAP CO.
Dayton, Ohio

We would like to examine your complete Catalog of Soaps and Sanitary Supplies.

Name .....

Address .....

City and State .....

ANOTHER FAMOUS PRODUCT ACCURATELY FILLED on the

S&S DUPLEX AUTOMATIC POWDER FILLING MACHINE

As shown above and at left below: At Hudson Products, Inc., one operator feeds empty cans onto conveyor... cans are filled two at a time... operator places lids on cans, machine presses lids firmly in place.

60 to 70 per minute!

The S & S Powder Filling Machine here shows how speedily and accurately a powder or granular product can be filled ... how a shade extra profit can be made; how competitive pricing can be met.

Many satisfied customers testify to the excellence of S & S Fillers; your inquiry in no way obligates you.

, FOR ANY POWDER OR GRANULAR PRODUCT.
SPEEDS TO SUIT YOUR NEEDS—
15-30-60-120 PER MINUTE

STOKES & SMITH Co
PACKAGING MACHINERY — PAPER BOX MACHINERY
4915 Summerdale Ave., Philadelphia, U. S. A.

AS THE EDITOR SEES IT

WITH a turn-about and strengthening of the fat and oil markets during the past month, buying has become more active and talk of inflation is heard more frequently. When fats were flat on their back, it seemed that nobody wanted them, but with an upturn in prices, everybody apparently decides that now is the time to buy. We have never seen it to fail that when prices are on the downtrend, prevailing opinion is that they will go lower, and when they are going up, they are always going higher. How quickly market sentiment can change is truly amazing. We have always had a hunch that business men were more influenced by a sort of race-track psychology in the purchase of their raw materials than they were by anything resembling cold facts and figures.

PRIORITIES, — soap and allied manufacturers are going to hear more about these over the coming months, and if history is any guide, they are going to get in the hair of many a manufacturer before the excitement of the current defense program has run its course. In charge of priorities is the Office of Production Management in Washington, now known in the newspaper headlines as OPM.

In time of war, or under conditions which exist today in the United States, we suppose that priorities for all sorts of raw materials are necessary. At the same time, in the hands of government officials, especially those newly inducted into government service, who may be upon occasion inclined to take a hysterical view of things, the power to enforce priorities can become a very dangerous power as far as the rank and file of industry is concerned. It has been known that in order to give a clear track to materials going into war industries, other essential industries have been made to suffer needlessly and unnecessarily. In fact, there are already signs of this very thing taking place, and the defense program has hardly got under way.

Now, those at the head of the OPM may be altogether capable and level headed, but they are not the ones who will enforce the details of a schedule embracing a thousand materials and a hundred industries. This job will actually be handled by the lesser lights of the OPM, and as any manufacturer knows who has ever had contact with government departments, therein lies the danger to industry. While we are getting ready to defend ourselves against invasion, we feel that the fact that the nation must continue to work, eat, and live should be impressed upon the OPM. In short, it should be urged to avoid the disturbance of normal industry as much as possible, even though this idea is supposed to constitute a part of the general priorities plan. After all, the great mass of those who work for a living in this country are not yet dependent upon war or defense industry. Peacetime pursuits are still feeding the bulk of our population. And any undue disturbance of these industries by the arbitrary enforcement of unnecessary priorities will be a serious mistake. Industry cannot afford to let the OPM forget this.

HOW much soap is there in a 40 per cent liquid soap? The answer to this question depends very much on where you sit when the picture is being taken. If you are a manufacturer, you may believe that the soap plus glycerine should total 40 per cent,—or you may believe that all the non-volatile material present should go to make up the 40 per cent. If you are a buyer of liquid soap,

—unless you are that one in a hundred who buys on specification and actually tests the soap as delivered,—you probably do not believe much of anything,—and care less just so long as the drum is labeled "40 per cent liquid soap." If, perchance, you are that one in a million who believes that this means 40 per cent anhydrous soap, you should resume writing letters to Santa Claus.

Just recently this subject has been brought into the forefront of the industry with the usual rise in temperature. We again looked into things around and about the trade, and after getting a number of expert opinions, we are exactly where we started,—nowhere. These opinions and comment are discussed elsewhere in this issue. That we need uniform standards in liquid soap selling is quite obvious. But which standards are best? The question is not as easy to answer as might appear at first blush.

CRITICISM has been leveled at the market reports which we publish each month, not on one occasion, but on several. The point has been made that these monthly summaries of the markets for oils, fats, chemicals, and other raw materials, are sometimes misunderstood by buyers, and that the figures are often taken as a reflection of the immediately current market. As such, particularly when the market has had an appreciable move between the time of writing and actual reading, the figures may be used against a supplier, whether it be raw material or finished soap, to show that he is out of line on the high side. We have never heard of any complaints the other way around.

In order to clarify what may be mistaken ideas in regard to our monthly market reports, we desire to point out that they are most certainly no basis upon which to determine day-by-day prices. They are brief summaries of the more important market developments of the preceding month, — a thirty-day period just prior to the date which is given at the top of each market summary. Price quotations are those as nearly as possible to the close of the period. At best, these are approximations of the market. In addition to this, it must be appreciated that close to a week goes by between the date of writing the reports and delivery of the magazine to the reader.

These facts, we always believed, were obvious from the very character of the reports which we publish, but evidently this is not the case. So, we hasten to explain. At the same time, we must admit that we are a bit suspicious that some buyers might not be above using our market reports, when such are to their advantage owing to late fluctuations, in at least an attempt to bolster their age-old plaint, "your price is too high."

FROM a small soap manufacturer, we have received an inquiry for "a competent soap boiler not subject to draft." It seems that the man currently filling the job is soon to be taken into the Army under the Selective Service Act. Although this problem is characteristic of practically all American industries at the present time, the case in question is that of a soaper, which brings the matter closer to home.

The difficulty for the smaller soap plants to secure capable men over 35 years of age, presents a real problem. Most men who know their business well are usually set in some job at that age. To take them away from present jobs means bidding up for their services, and this is something which most small soapers cannot afford to do. The larger companies distinctly are at an advantage in circumstances of this kind. So the smaller outfits are faced with taking such men as they can get if they do not want to gamble on younger men who may be lifted out of their plants into the Army at any time.

And then, there is the problem of the men who may be subject to call by the Army. They find it difficult to obtain new jobs, and those already in jobs are viewed by employers as liable to draft, and may be held back in a dozen ways as a consequence of this.

On the one hand, the average small soap manufacturer has his men to consider, and on the other, he has his business which may be disrupted by the loss of a key man or two. What can he do about it? Not too much of anything, except perhaps to bend over backward in being fair to these men whose employment difficulties are not of their own making.

CLEANING ALUMINUM

A study of the chemical Characteristics of aluminum, its protection, and the use of safe and harmful cleaning materials

By J. R. Akers and R. B. Mears

Aluminum Company of America

CERTAIN types of aluminum articles or equipment require no periodic cleaning or other maintenance in order to retain a satisfactory appearance under service conditions. Outdoor storage tanks for acetic acid, glycerin, and other chemicals generally fall in this class. However, most other types of articles, whether made of aluminum or of other metals require some periodic maintenance if they are to fulfill properly their functional or appearance requirements. Thus, the problem of developing suitable, efficient cleaners for metallic articles is an extremely important one.

Recently, perhaps because of the activity in the construction of aircraft, manufacturers of detergents have shown an increased interest in developing cleaners particularly suited for use on aluminum. This paper presents a summary of the chemical characteristics of aluminum and also the present status of the cleaner art as applied to aluminum. It is hoped that this information will be of assistance to those interested in cleaning aluminum and will lead to the development of improved cleaning methods.

A detailed account of the many forms in which aluminum and its alloys are used would be out of place here, but many of its principal applications and those which require the most attention from the standpoint of cleaning and maintenance are in the transportation, food and beverage, architectural and chemical industries. Important reasons for the use of so much aluminum in these industries are the lightness and strength of its alloys, their resistance both to atmospheric corrosion and to the action of a great variety of chemicals, their adaptability to ornamental and useful finishes and the fact that aluminum is non-poisonous and will not form harmful or colored compounds with foods.

Chemical Behavior of Aluminum: When most common metals are exposed to the atmosphere or to aqueous solutions, they become covered with a thin invisible oxide film. In the case of aluminum, the film is highly protective against further oxidation so that is never attains a very appreciable thickness. In the case of some other metals, particularly iron, oxidation will continue indefinitely, forming heavy scale-like layers.

Since all aluminum encountered in service has been exposed to the atmosphere, our knowledge of its behavior is largely based on the characteristics of this spontaneously formed oxide film. It might be expected that substances which did not affect aluminum oxide would have little action on aluminum itself since the latter is covered with a film of the oxide. This is usually the case. Thus, neutral solutions in which aluminum oxide is not soluble are generally not corrosive to the metal or its alloys, while decidedly acid or decidedly alkaline solutions are more likely to prove corrosive. There are exceptions, of course. Concentrated nitric acid, acetic acid and most other organic acids have only a small to negligible action on most aluminum alloys. Ammonia solutions, although they are definitely alkaline, have no continued action on aluminum alloys. Since the resistance of aluminum to chemical attack is generally the result of the protection afforded by its oxide film, it might be expected that oxidizing substances, such as chromates, permanganates, nitrates, etc. would have less action on the metal than reducing substances and this is true. Oxygen is one of the most common natural oxidizing agents but solutions containing considerable amounts of dissolved oxygen are usually less corrosive to aluminum than are solutions devoid of oxygen because the oxygen tends to heal breaks in the oxide film which nature has provided as a protective coating. On the other hand, with many other metals the presence of dissolved oxygen will greatly stimulate corrosion.

While aluminum is not appreciably affected by most neutral salts, the halogen salts of the alkali metals

Cleaning Prevents Pitting—A corrosive water containing copper salts was boiled in both aluminum pans. The pan on right received no cleaning and perforated after 324 hours. The pan on left was cleaned with steel wool and soap after each four hours boiling and was in good condition after 1000 hours.

are more active and under certain conditions will cause localized attack. Furthermore, attack by solutions of these salts is greatly stimulated by the presence of dissolved heavy metal salts such as copper, tin or nickel compounds. Tests readily show the pronounced corrosion stimulating action of one part per million of copper chloride when added to a solution containing sodium chloride and sodium sulfate. The action of corrosive salt solutions, either devoid of or containing dissolved heavy metal compounds, can usually be prevented by adding certain chemical inhibitors such as sodium chromate or sulfonated oils. The concentration of these inhibitors required for such protection is normally not over one-eighth oz. per gallon. Small amounts of sodium hexametaphosphate are of aid in reducing the action of waters which contain dissolved heavy metal salts, probably because this compound ties up or sequesters the heavy metal ions.

Aluminum and its alloys are rapidly attacked by caustic alkalies, by alkali carbonates, by the halogen acids and by the halogens themselves. This attack is ascribed to the solution or removal of the natural oxide film. Inhibitors such as sodium disilicate can be used to prevent attack by alkali carbonates or other salts which hydrolyze to give an alkaline reaction. Sodium silico fluoride also has some inhibiting action[1] in such alkaline solutions, although it is apparently less frequently employed than is sodium silicate.

Alloys of Aluminum: This discussion, so far, has related to the general behavior of aluminum alloys. There are, however, marked variations between the characteristics of several of the commonly employed alloys. Thus, 2S, which is commercially pure aluminum, and 3S, which is aluminum containing 1.2 per cent manganese, as a rule behave similarly upon exposure in most environments. These alloys are commonly used for articles where strength is not of great importance. Such things as cooking utensils, chemical equipment, piping, etc., are usually made of 2S and 3S.

The alloys known as 17S and 24S are high-strength, heat-treated aluminum copper alloys and are

[1] H. Wolf and H. Tuxhorn, *Aluminium*, 1940, p. 186.

widely used for the structural members of aircraft, light weight trains, buses and other structural applications. They are not as resistant to the action of neutral salt solutions as are 2S and 3S.

The aluminum alloy, 52S, contains 2.5 per cent magnesium and 0.25 per cent chromium. It has higher physical properties than 2S and 3S and is used in high-strength sheet metal work and in marine transportation applications where strength and high resistance to corrosion are required.

The alloy 53S (containing magnesium and silicon as alloying additions) is used where high corrosion resistance with moderately high strength is desired. It is employed in naval, architectural and industrial applications. It is the alloy of which aluminum beer barrels are made. Its chemical behavior is similar to that of 2S, 3S and 52S.

In addition to these alloys, the clad alloys are now receiving increasingly wide usage. These are made with a central core of one aluminum alloy comprising about 90 per cent of the total cross section, with aluminum or another aluminum alloy of a different composition on either side of this core. The coating is metallurgically bonded to the core so that it is integral with it. The two most widely used alloys of this type are known as Alclad 3S and Alclad 24S. In the case of Alclad 3S, the core is of 3S and the coating is an alloy containing a small amount of zinc. This particular coating-core combination was developed because the coating has a solution potential which is appreciably above that of the core and will therefore protect it electrochemically just as zinc will protect iron. Thus, if a small area of corrosion starts in the coating, it will only penetrate to the core metal after which it will spread longitudinally instead of going deeper. In this way the core is protected until a very substantial part of the coating has been destroyed. This means that a tank made of Alclad 3S would resist perforation by most neutral salt solutions for a very much longer time than would an ordinary 3S tank, although the general surface corrosion of the Alclad 3S might be just as great as that of the 3S.

Alclad 24S has a coating of high purity aluminum and a core of 24S. Electrochemical protection is obtained with this combination just as it was in the case of Alclad 3S. This duplex alloy is widely used as the wing covering on modern aircraft. In this particular combination the pure aluminum coating not only electrolytically protects the core but is much more rsistant to general attack than is the bare 24S. The continued presence of the pure aluminum coating over the core is highly desirable. Since the coating comprises only about 5 per cent of the total thickness of the sheet on each side, the thickness of the protective coating on a sheet 0.020″ thick is only about 0.001″. Therefore, in cleaning Alclad sheet it is very important that the coating is not affected for if it should be dissolved by harmful chemical cleaners or removed by abrasive cleaners, the metal will behave like ordinary 24S and not like Alclad 24S.

In addition to the wrought alloys, there are a wide variety of casting alloys in common use. Their chemical behavior can be generalized by stating that aluminum casting alloys containing only aluminum and silicon or aluminum and magnesium are more resistant to most solutions than are those containing appreciable amounts of copper or zinc. The alloys containing appreciable amounts of magnesium are usually more resistant to alkaline solutions than are those containing little or no magnesium. On the other hand, they are somewhat more susceptible to the action of dilute acids. Cleaner requirements for casting alloys are similar to those for wrought alloys.

Coatings: For some types of cooking utensils, for store fronts or other architectural applications on buses or trains where it is desirable to maintain an attractive appearance for a considerable length of time, aluminum oxide coatings are frequently employed on aluminum alloy parts. These coatings are applied electrolytically to the aluminum parts prior to their installation. It is impossible to apply coatings of this type in the field. The coatings formed during the Alumilite[2] process are of aluminum oxide and can be built up to a thickness of the order of 0.0005″. The coatings are hard, tarnish resistant, and are not affected by many neutral chemical solutions. They are, however, readily attacked by uninhibited alkaline solutions, and once a coating of this type has been destroyed by an alkaline solution, it cannot be repaired in the field. In cleaning Alumilite coated parts, therefore, it is essential that a cleaner which does not attack aluminum oxide be employed, since otherwise a valuable finish may be ruined. It is often possible to tell an Alumilite coated aluminum part from a bare aluminum part by simply scratching them. The higher hardness of the Alumilite coating thus is revealed.

While Alumilite coatings are widely used for decorative effects, they also form an excellent basis for paint, and on aluminum parts which are to be exposed in very severe environments, Alumilite coatings are sometimes used and are followed by the application of paint coatings. Alumilite coatings can be dyed with various organic dyes or inorganic pigments, and the aluminum colored in this manner is sometimes used for store fronts and other applications where colored finishes are desirable.

Alrok[3] coatings are also sometimes employed on aluminum articles. These coatings are generally a dull green color and are quite soft. They are generally used as a base for paint. They, too, are dissolved by the action of strong alkaline materials. Alzak reflectors are now being used extensively for street lighting and other outdoor applications. These reflectors are made of aluminum alloy sheet

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[2] Process patented, Aluminum Company of America.
[3] Registered trade-mark:—Aluminum Company of America.

What SOAP CONTENT?

When a liquid soap is represented to be a 20% soap, what should this mean?

No standard practice exists today in the sale of liquid soaps. Should it be on a basis of anhydrous soap, soap plus glycerine, or total solids? Opinion in the trade varies widely. Would a standard practice help the industry? Could it be established, —and if so, how? —The Editors.

WHEN a liquid soap is represented by its manufacturer to be a 20 per cent or 40 per cent soap, just what should this percentage designation mean? Theoretically, of course, it should mean that the soap in question contains that percentage of *actual anhydrous soap*. But there is a wide difference between laboratory theory and the practical side of soap selling. Day after day, and week after week, soap salesmen offer liquid soaps of this and that percentage, and in not one case in a thousand do they mean anhydrous soap content unless they specifically designate their meaning as such. What they actually mean is either one of two things, (1) soap plus glycerine, or (2) total solids, which would include not only the soap and glycerine, but also any mineral salts, thickeners, fillers, or any other non-volatile materials which might be contained in the liquid soap. It is a safe guess that many soap salesmen do not know what they mean when they say, "20 per cent soap,"—that they do not know on what basis the firm for which they sell has determined this figure.

To be exact, no matter what the circumstances, when a liquid soap is termed a 20 per cent soap, it should contain 20 per cent of anhydrous potash salts of the mixed fatty acids of the oils from which the soap is manufactured. If "soap" is the word used in connection with the 20 per cent, this means only one thing, — and it does *not* include glycerine, for glycerine is no more soap than the water or mineral salts which might be present. However, in this day and age of things practical, not even the most meticulous sellers mean anhydrous soap alone. Trade practice today among some firms of the soap industry recognizes "soap content" of a liquid soap to include the soap plus the glycerine. Among others, total solids are given as an indication of "soap content,"—and as mentioned, total solids might mean almost anything of a non-volatile nature.

Manufacturers who quote prices on a basis of soap-plus-glycerine content are naturally at a marked disadvantage when in competition with those who quote on a basis of "total solids." Those who price their products on a "total solids" basis, and who may bring up the percentage figure by the addition of mineral salts and thickeners, ordinarily do not shout this fact from the housetops. As a rule, they merely designate their products as "20 per cent soap" or "40 per cent soap" and let the buyer guess what the percentage means. Numerous have been the complaints from the manufacturers who stick to a soap-plus-glycerine figure, and their demands that some kind of standard trade practice be established are to be expected. But does the establishment of "standard practice" mean that all manufacturers will agree and adhere to the practice?

Observations over the years show quite clearly that with the possible exception of some of the larger consumers, such as large industrial establishments, rail and communication groups, and certain state and U. S. Government departments, the purchase of liquid soaps has been mostly a hit-or-miss affair. To a great extent, the word of the supplier has been relied upon as to the material delivered. That this has opened the door to the chiseler, and at the same time, placed the reputable supplier at a marked disadvantage, is quite obvious. Even among the leading jobbers, the practice of buying liquid soap and reselling it with never a test, has been the usual thing. Add to this a highly competitive market where price is a very powerful influence, and it does not take much imagination to see that there has been and is a great opportunity for subterfuge and plain chiseling.

Although there is no excuse for misrepresentation in the sale of anything, the main fault for chiseling in liquid soaps lies with the buyer. In short, a buyer who will permit himself to be cheated, can and will be cheated, but there is no way to cheat a buyer who refuses to be cheated. It is the same old story,—the manufacturer who has nothing to hide is only too glad to have his products tested,—not a hand-picked sample supplied by the seller, but a random composite sam-

ple taken from the soap *as delivered*. The reputable seller is always willing to give *full information* about analysis, soap content, etc.; the other seller would rather confine his information to a statement of "20 per cent soap," and not go too much into detail.

IN order to uncover something of trade opinion on this subject of designating the strength or concentration of liquid soaps, and, if possible, to crystallize this opinion into a declaration of uniform trade practice, a few leading manufacturers and jobbers in the trade were consulted and the subject discussed with them. Some of these opinions as given follow:

"Is it the trade custom in speaking of percentage of liquid soaps to limit percentage to anhydrous soap content alone or to include total solids?" It has been a practice of our company, in speaking of percentage of liquid soap to include glycerine in the total soap content. In speaking of an anhydrous soap content, only the fatty anhydride and caustic calculated as K_2O are classified as the actual total anhydrous soap.

There seems to be a world of opinion on this particular question and we believe that a settlement once and for all would do everyone a great deal of good, including customers, jobbers, and manufacturers.

In products which we have checked in our laboratory, we have found that some manufacturers include any additive agent such as metasilicate, the superphosphates and phosphate salts as part of a solids content. We have steered away from this practice and it is our opinion that the total solids of the liquid soap referred to should include only the actual soap present and the natural by-product of saponification, glycerine. We will go even further to state that glycerine should be included in the anhydrous soap content, as it is a vital part of the finished batch and glycerine is recognized as a very desirable material to have in a liquid toilet soap."

ANOTHER manufacturer had the following to say: "We have given much thought to the subject of what should be included in the percentage of a liquid or soft potash soap. We have felt that only the anhydrous soap alone should be counted, for after all, it is soap which the customer is buying. But on giving further thought to the matter, we feel that it is best not to disturb present trade practice of considering glycerine as part of

the soap content. The reason for this is that a liquid or soft soap is distinctly superior when made from the whole vegetable oils. If too much stress is laid on anhydrous soap alone, there might be a temptation to use fatty acids and high-acid dark oils in order to meet specifications. The glycerine itself is a very desirable feature in a liquid soap and it might be best to leave well enough alone. So we believe that trade practice should continue to consider soap plus glycerine as the total soap which is indicated by the percentage figure."

A manufacturer in the Middle-West made the following short comment: "The trade custom seems to be to count total solids when buying a liquid or soft soap. They speak of a 40 per cent liquid soap, meaning in most cases total solids. It is my belief, however, that liquid soaps should be sold definitely on an anhydrous basis. Most of the concentrated soap sold today of the so-called 40 per cent variety actually analyzes 36 per cent or less anhydrous soap."

A LEADING manufacturer of potash soaps says: "This question of the 'soap content' of liquid soaps is a subject that has been knocked around from pillar to post. I think our company was one of the first, if not the first, to sell liquid soaps on the basis of anhydrous soap content. At that time we took this matter up with a number of people who should be authorities and the concensus of opinion was that the anhydrous soap content should include (1) combined fatty anhydrides, (2) combined alkali, (3) glycerine.

I note it is argued that glycerine is not soap, and some say that anhydrous soap should include only the combined fatty anhydride and combined alkali. Nevertheless a liquid soap that did not contain at least the glycerine naturally present in the oils from which the soap is made, would not be a very satisfactory product. Therefore, from the standpoint of the value to the actual user of the soap, glycerine should be included as a part of the anhydrous soap content. That is our position and one from which we have not deviated.

This differs from the 'total solids' figure that some advocate. Where total solids are to be determined, it not only includes the soap, but also any free alkali or fillers that may be present. The term 'total solids' does not give a true picture as does the term 'anhydrous soap,' which according to our definition includes the soap and glycerine naturally present in the oils from which the soap is made. We feel that is the only logical basis on which to determine the value of a soap.

After all, this question of the anhydrous soap content is somewhat of a tempest in a teapot. The bulk of the liquid soap sales are made to consumers or through jobbers who have no means of determining the anhydrous soap content, and apparently have no interest in it. It is an item which comes under the head of general expense for it is furnished free by the consumer for his employees or the tenants of the building, and he is always on the lookout for something cheaper. We also find that some liquid soaps are used in certain manufacturing processes, and there it occupies a different position. The buyer of the soap for this purpose is interested, and keenly interested, in knowing just what he is getting. There the question of the anhydrous soap content enters the picture.

I have talked to buyers over the country, among them those who are primarily interested in price. It has been stated to me that they (the buyers) do not care what the anhydrous soap content is as long as the manufacturer will represent his soap as 40 per cent and if necessary, stamp 40 per cent on the drum. It was only in my first year or so in the soap business that I could look knowingly at a sample of liquid soap and tell you definitely and without hesitation, the anhydrous soap content it contained. Today, after some 20 years in the business, I must be getting exceedingly dumb for I now would not even venture a guess as to the anhydrous soap content, but depend entirely upon an actual chemical analysis. If I cannot tell the difference between a 30 per cent and a 40 per cent anhydrous soap without having it analyzed, what chance has the casual purchaser of liquid soaps to make that determination by eye examination? The answer is none, and most of them are not interested in making an analysis of that 5 gallons, or 10 gallons or even a drum of liquid soap that comes in and which they have to buy occasionally to supply their employees or tenants.

Even if every purchaser of liquid soap were supplied with some simple means of determining the anhydrous soap content, I question if many of the liquid soap buyers would even make use of them. The subject is not of sufficient interest to them.

And that is why I say this is somewhat of a tempest in a teapot. We will still continue to sell our soaps on the basis of anhydrous soap content for we sell primarily to the jobbers. It has been an educational job, and through the samples that come into our laboratory regularly, we more or less 'police the industry' and we do not hesitate to tell the man who sends in a competitive sample that he has a good product if it is good, or what the anhydrous soap content actually is."

SAYS an Eastern manufacturer: "We do not sell our liquid soaps on anhydrous soap content, but sell them on 'soap solids' as do most other companies who are selling liquid soap today. In our price list under Liquid Soap, we say 15 per cent Liquid Soap, 20 per cent Liquid Soap, 30 per cent Liquid Soap, 40 per cent Liquid Soap, with no mention of anhydrous whatsoever. The only soap where we mention the anhydrous is under one item which is mentioned specifically as 15 per cent anhydrous.

Like other soap manufacturers, we guarantee that our 40 per cent

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Ewing Galloway.

SOAP LABOR RECORD

SOAP INDUSTRY GIVEN CLEAN BILL OF HEALTH BY U. S. DEPARTMENT OF LABOR IN REPORT ON INDUSTRY OBSERVANCE OF WAGE AND HOUR LAW

TRITE, indeed, is the statement that the soap industry is clean. In the sense of its compliance with the Fair Labor Standards Act, however, the statement can be repeated with confidence. During more than two years of enforcement of this Wage and Hour Law, the U. S. Department of Labor has had occasion to visit but three soap plants. Two of these were manufacturers, the third turned out to be a retailer.

Of the two manufacturers, one was violating the minimum wage and maximum hour provisions of the Act and the provision requiring that certain records concerning wages, hours, and other conditions and practices of employment be maintained. Because of his wage and hour infractions, he owed $69.86 to certain of his employees as back pay. The second manufacturer was in full compliance with all the provisions of the law. The retailer, since he was strictly a retailer making most of his sales in intrastate commerce, was entirely exempt.

There have been a few more violations in the sanitary chemical industry. Nearly a score of cards in the files of the Wage and Hour Division disclose the facts in these cases. Many of these cases originated through employee complaints to the Division. The most outstanding was a distributor of barber and beauty supplies in Detroit, employing 46 workers. The proprietor was found owing his employees over $1,000 in restitution.

Next in line was a manufacturer of disinfectants and chemicals in Kansas City. A small plant, its employees received nearly $900, representing the difference between the wages they had actually been paid and what they should have been paid in accordance with the law.

In other establishments inspected, both manufacturing and distributing, complete compliance or only minor violations were indicated. In one New Jersey manufacturing plant, employing 197, for instance, only $4.20 was found due employees in back wages!

One Chicago wholesaler of janitor's supplies was violating the minimum wage, maximum hours, and record keeping provisions of the law and was also employing oppressive child labor, as "oppressive child labor" is defined by the law. A plant producing deodorants and moth preventatives at Belleville, New Jersey, was similarly at fault. In general, however, the record of soap and sanitary chemical manufacturers in living up to the wage-hour requirements has been exceptionally good.

While the soap and allied industries appear to be in current compliance with the Wage and Hour Law, such would not necessarily prove the case if a more intensive industry-wide survey should ever be undertaken by the Wage and Hour Division. Such drives toward education in the law and securing observance of its pro-

visions have already been conducted by the Wage and Hour Division in the fields of lumber, apparel, luggage and leather goods, hosiery, woolens and worsteds, furniture, and boots and shoes. Numerous violations have been uncovered in these industries and back pay to the tune of several hundred thousand dollars recovered for employees.

For the purpose of this article, General Philip B. Fleming, Administrator, of the Wage and Hour Law, has stated that no drive in the soap industry is currently contemplated. He added, however, that since these drives have been based, generally, on the number of employee complaints received and the number of violations found in routine inspections, such a drive in the soap group would be possible, although hardly probable from present indications.

"Actually," General Fleming said, "soap manufacturers and distributors have a great deal to gain from compliance with the Wage and Hour Law in their own and all other fields. Enforcement of the law is now adding about $100,000,000 per year to American payrolls—to say nothing of the six or seven million dollars in actual cash restored to employees as back pay for work already performed.

"It has been claimed that this annual increase and the restitution payments made necessary by the law are a definite drain on capital. This is far from the case. By far the great majority of the recipients of these sums have long been on the economic border line. Most of them belong to the low-wage class. And when suddenly they receive an increase in pay and frequently a single restitution check of anywhere from $10 to a thousand or more dollars, their attention turns to those things they have long wanted — better food, more clothing, and more luxuries — and luxuries mean, among other things toilet soap, cosmetics, perfumes."

THE provisions of the Wage and Hour Law are not difficult to understand, nor difficult to follow. The law applies to employees engaged in interstate commerce or in the production of goods for interstate commerce, as these terms are broadly defined in the Act. Certain employees are specifically exempt under the law.

To employees entitled to the benefits of the Act, a minimum wage* currently set at 30 cents an hour must be paid. Overtime compensation of not less than time and a half regular rate must be paid for all hours worked over 40 in any single workweek. There are no restrictions whatever on the number of hours that may be worked provided that payment for overtime is made as required.

In some industries, Wage-Hour committees comprising representatives of the employer, the employee, and the public have set the minimum wage at a higher figure than the 30-cent minimum specified in the Act.

Industry Committee No. 19, for the drug, medicine and toilet preparations industry, recently recommended to General Fleming the payment of not less than 40 cents per hour to each covered employee in the affected field. Specifically excluded from this field, however, are plants engaged in the "manufacture or packaging of shaving cream, shampoo, essential (volatile) oils, glycerine, and soap, or the milling or packaging without further processing of crude botanical drugs." A public hearing on the 40-cent recommendation was held in Washington, March 10 and 11 and further oral argument will be heard April 16.

The minimum wage and maximum hours provisions are all that affect the worker directly. The employer is required to maintain certain simple records as to hours of labor, rates of pay, overtime hours and pay, etc., for each employee. He may not ship across state lines goods made under non-compliant conditions, or goods in the production of which "oppressive child labor" has been employed. Failure to abide by any of these provisions may result in fines up to $10,000, imprisonment up to six months for second or subsequent offenses, and injunction against interstate shipment of "hot goods."

In addition, the law provides that any employee may sue a non-complying employer for backwages or overtime payment due him and authorizes the courts to award the full amount of compensation due, plus an equal amount as liquidated damages, also reasonable attorneys' fees and costs of the action.

Besides observing the law himself, the manufacturer or packager should also make reasonable efforts to ascertain whether or not his labels, packages, cartons, and shipping crates, etc., are produced in a plant that complies with the law, since the hot goods clause might be applied against a non-compliant printer's goods and result in the tying up of that portion of the soap man's products packed in "hot" containers.

Generally, all employees will be covered in a plant which is engaged in interstate commerce or in producing goods for interstate commerce. There are, however, certain exemptions that may be applied. A chemist, for instance, working in his professional capacity in a soap plant, would be exempt from the law if he met the $200 a month salary test of the professional definition. So, also, would be any other strictly professional employee who met the requirements of the definition.

Executive employees may be exempt only if their duties fall within certain specific categories. If an employee is charged primarily with management of the entire establishment or a regular department or subdivision thereof, and if he regularly directs the work of other employees, and if he has the authority to hire or fire, to promote, etc., and if he regularly exercises discretionary powers, and if his work of a non-exempt character does not exceed 20 per cent or one-fifth of the number of hours worked in that workweek

*This should not be confused with the minimum wage of 40 cents per hour fixed for the soap industry by the U. S. Public Contracts Board under the Walsh-Healy Act. This minimum, and a maximum work week of 40 hours must be observed by all firms supplying soaps for governmental purchase in quantities having a value of $10,000 or more.

by the covered employees under his direction, and also if he is paid $30 or more per week on a salary basis, he may be considered exempt from the law.

It is important to note that under the above definition of "executive," the various clauses are not alternatives—that is, all of these requirements must apply and not just two or three.

It should also be noted among the requirements that an executive may do a certain amount of non-exempt (non-mangerial) work provided that it does not exceed one-fifth of the number of hours worked in that workweek by the covered employees under his direction. To put it differently, if a man does a full-time managing job, but on ocasion helps out in the laboratory or factory, he may still be considered an executive if this helping out does not run more than eight hours in a 40-hour workweek. A manager in sole charge of a physically separated branch establishment is not limited by this 20 per cent rule.

An administrative employee in a soap plant may be exempt if, on a salary or fee basis, he receives at least $200 per month, regularly and directly assists executives, and performs responsible non-manual office or field work related to management policies and the like which involves the exercise of discretion and independent judgment. Auditors and statisticians, for instance, or credit managers, may be classed in this group.

Every plant producing goods for interstate commerce has a certain number of maintenance employees, such as mechanics, night watchmen, janitors, etc. Generally, such employees are covered by the law. The deciding question is: "Are they engaged in a process or occupation necessary to the production of goods for commerce?"

The coverage of the Act is not limited merely to employees who are engaged in actual physical work on the product itself. Indeed, it may be stated as a general proposition that with the exception of employees who are exempted by specific provisions of the statute, all the employees in a place of employment where goods shipped or sold in commerce are produced, are included in the coverage, unless the employer maintains the burden of establishing, as to particular employees, that their functions are so definitely segregated that they do not contribute to the production of the goods for interstate commerce.

PAINT CLEANERS . . .

The how and why of special paint cleaners,—a discussion of composition, characteristics, advantages, and disadvantages of various cleaners for painted surfaces,—a feature article by Dr. C. A. Tyler to appear in the next issue. Watch for it!

Outside salesmen, are generally exempt from the Wage and Hour Law and may work as long as desirable or necessary without regard either to the minimum wage or overtime provisions of the law. If, however, they should do manual work in the plant for more than one-fifth of the hours worked by covered employees, then they, too, would be covered.

It might be mentioned in passing that should the recommendation of the Drug, Medicine and Toilet Preparations Industry Committee for a 40-cent minimum be adopted after the conclusion of public hearings, plants producing several items might be required to observe two wage minimums. For instance, employees in the cosmetics department of a large plant will be paid the 40-cent minimum recommended by the Committee, while employees in the shaving cream or shampoo sections will be under the regular minimum of 30 cents.

In the smaller factories, where employees from time to time may be switched from one department or set of duties, care must be taken in the maintenance of accurate records covering them. Generally, any exempt employees transferred to non-exempt tasks for a day or so must be paid in accordance with the law as if covered for that entire workweek. However, where part of a plant is operating under the regular minimum and an employee is transferred from this part to a department where an industry committee has set a higher wage order, he is only required to be paid the higher rate for the precise amount of time that he spends on the higher rated job.

Some employers feel that the necessity for paying overtime under the Wage and Hour Law is unfair, though the Wage and Hour Division deny that this intention exists. Time and a half for overtime was required by Congress with one thought in mind — to make overtime expensive in order that more regular workers would be employed.

The Wage and Hour Law was not enacted by Congress, they say, to work hardship on any individual or any phase of American business or industry. It was enacted to give to the worker a fair break as regards his hours of work and his rates of pay. It was enacted, thus, to benefit the worker.

But it also benefits the employer and the Nation. It insures for the legitimate business operator—the soap man, the automotive builder, or the junk man — legitimate competition. It removes from circulation the "gyperator"—the man who can sell his products at lower rates—not because he is a better production man, but because he pays his workers starvation wages.

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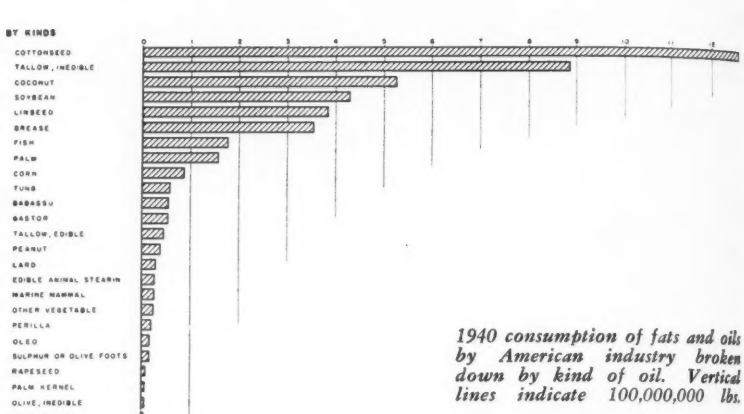
Portugal marks a new entry into the field of essential oils, oils now available from that source including rosemary, lavandula stoechas, myrtle, eucalyptus and ciste labdanum. The rosemary oil has a softer and sweeter odor than that of the French oil. The oil of L. stoechas is very pleasant-smelling, soft and sweet in odor, definitely of a lavender type but not at all like that of the spike lavender. The myrtle oil, greenish in color, has a very pleasant fresh odor commended for use in soaps. Eucalyptus oil from a Portuguese source has a much pleasanter odor than many such oils previously examined.

SOAP FAT USE *at peak* in 1940

Fat Consumption at Soap Kettle Up 2.2% in 1940, Topping 1939 Record — Large Gain in Grease Offsets Decline in Use of Palm, Fish, Whale Oils

FACTORY consumption of animal and vegetable fats and oils by the American soap industry showed a slight increase for 1940 as compared with the record year of 1939, according to figures just released by the U. S. Bureau of the Census. This, in spite of the fact that soap sales in pounds for 1940, as reported by the Association of American Soap & Glycerine Producers, were 4 per cent less than sales in 1939. Differences in soap stocks at the ends of the two calendar years may account for the increase on the one hand and the decrease on the other, as of course one set of figures reflects manufacturing activity while the other is based on soap sales.



1940 consumption of fats and oils by American industry broken down by kind of oil. Vertical lines indicate 100,000,000 lbs.

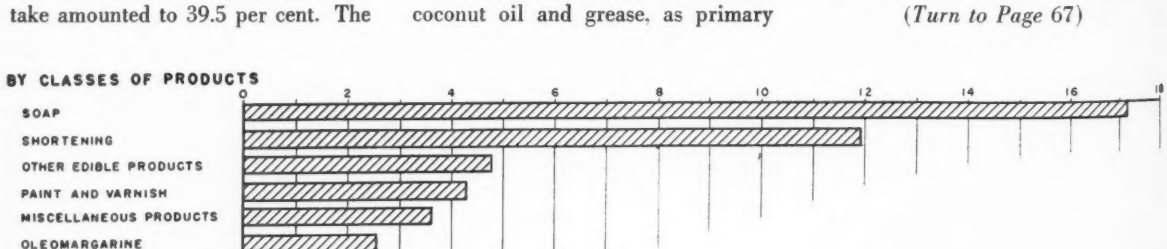
The 1940 consumption of fats and oils by the soap industry totaled 1,722,634,000 pounds, to which must be added 147,072,000 pounds of foots, giving a grand total of 1,869,706,000 pounds, an increase of 2.2 per cent as compared to the 1939 figures of 1,653,704,000 pounds, plus 177,221,000 pounds of foots for a grand total of 1,830,925,000 pounds.

A further gain in the relative importance of the soap industry as a consumer of fats and oils was also shown in 1940. Out of the total for all industries of 4,737,858,000 lbs. of fats and oils, the soap industry's take amounted to 39.5 per cent. The comparative figure for 1939 was 38 per cent, for 1938, 37 per cent, and for 1937, 34 per cent.

Of inedible tallow, the most important soap stock in the United States, 786,456,000 lbs. went into soaps in 1940. Some 88.9 per cent of all the inedible tallow consumed by industries in 1940 found its way into the soap kettle. Second in importance continued to be coconut oil of which 396,857,000 lbs. were used in soap manufacture in 1940. The use of grease in the manufacture of soap increased sharply in 1940,—the total for the year being 256,886,000 lbs., an increase of 112.5 per cent over the total for the preceding year. These three soap stocks, inedible tallow, coconut oil and grease, as primary fats and oils, accounted for 77 per cent of all the soap stocks used in 1940. The remaining 23 per cent of soap stocks was made up, in the order of their decreasing importance, of: fish oils, palm oil, babassu oil, marine animal oils, soybean oil, olive foots, corn oil, cottonseed oil, inedible olive oil, linseed oil, castor oil, and miscellaneous vegetable oils.

Fish oils showed a loss in consumption, the total consumption in this classification for soap use being 88,661,000 lbs., for 1940, or a loss of 23 per cent as compared with the 1939 figure. Less palm oil was also used in 1940, consumption dropping to 84,934,000 lbs., while babassu oil, the use of which in soaps has

(*Turn to Page* 67)



The soap industry led all others as a user of fats and oils during 1940. Vertical lines indicate 100,000,000 lbs.

Fat and Oil Consumption

By The American Soap Industry 1933-1940

Fats and Oils	1933 (1000 lb.)	1934 (1000 lb.)	1935 (1000 lb.)	1936 (1000 lb.)	1937 (1000 lb.)	1938 (1000 lb.)	1939 (1000 lb.)	1940 (1000 lb.)
Tallow	508,824	662,858	663,002	660,020	613,509	702,267	785,041	786,456
Coconut oil ..	322,264	341,124	229,711	307,376	252,241	342,982	388,912	396,857
Palm oil	187,962	154,704	87,311	78,453	141,358	91,642	102,146	84,934
Grease	124,743	142,782	98,086	98,714	94,247	96,356	120,856	256,886
Fish oils	52,168	64,548	109,970	128,044	123,879	79,874	114,961	88,661
Whale oils ..	44,895	33,996	28,440	32,603	65,130	66,080	51,522	19,250
Palm-kernel oil	6,278	16,516	37,173	26,443	111,514	29,498	3,657	197
Olive foots ...	31,878	30,411	31,507	23,965	17,984	15,013	19,068	14,958
Soybean oil ..	4,235	1,354	2,549	5,023	10,274	10,897	11,177	17,612
Babassu oil ..	....	.	....	8,993	14,308	8,289	37,633	41,221

Factory Consumption of Primary Animal and Vegetable Fats and Oils, By Class of Products, Calendar Year 1940

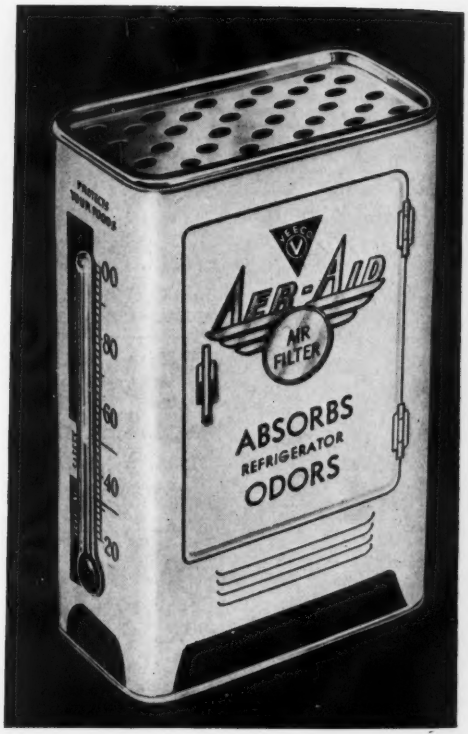
(Quantities in thousands of pounds)

KIND	TOTAL	Shortening	Oleomargarine	Other Edible Products	Soap	Paint and Varnish	Linoleum and Oilcloth	Printing Inks	Miscellaneous Products	Loss (including oil in foots)
TOTAL	4,737,858	1,196,424	255,953	480,378	1,722,634	434,736	111,813	21,178	367,670	147,072
Cottonseed oil	1,279,960	823,359	115,947	263,323	2,971	65	.....	152	2,793	71,350
Peanut oil	39,530	22,516	1,728	9,743	387	.....	.....	.....	1,334	3,822
Coconut oil	528,203	17,576	21,783	54,689	396,857	1,261	.....	2	4,531	31,504
Corn oil	88,390	746	419	70,956	3,638	174	.....	.....	2,110	10,347
Soybean oil	431,641	212,317	87,106	39,980	17,612	29,828	7,254	82	16,538	20,924
Olive oil, edible.....	4,809	.....	.....	4,570	130	.....	.....	.....	109	.....
Olive oil, inedible.....	6,125	.....	.....	.....	1,637	7	.....	.....	4,481	.....
Sulphur oil or olive foots..	15,884	.....	.....	.....	14,948	.....	.....	.....	936	.....
Palm-kernel oil	6,773	1,146	.....	4,772	197	.....	.....	.....	24	634
Palm oil	157,213	33,224	4	3,081	84,934	2	.....	2	*32,302	3,664
Babassu oil	55,481	381	6,148	5,759	41,221	.....	.....	.....	8	1,964
Sesame oil	1,343	24	.....	1,133	38	.....	.....	.....	34	114
Rapeseed oil	8,788	.....	.....	.....	49	88	.....	.....	8,651	.....
Linseed oil	386,225	.....	.....	.....	1,489	270,239	84,262	17,108	13,013	114
Tung oil	59,057	.....	.....	.....	.....	54,611	2,064	1,728	654	.....
Perilla oil	18,645	.....	.....	.....	.....	14,659	2,387	1,108	491	.....
Castor oil	54,046	.....	.....	.....	1,225	24,368	137	352	27,950	14
Other vegetable oils.....	23,369	32	.....	5,020	2,051	8,336	706	20	6.756	448
Lard	29,519	16,786	5,098	6,587	645	.....	.....	9	135	259
Edible animal stearin.....	27,073	16,940	3,387	5,926	549	.....	.....	6	231	34
Oleo oil	15,886	880	14,333	62	127	.....	.....	.....	453	31
Tallow, edible	46,750	39,595	.....	4,777	657	.....	.....	1	1,611	109
Tallow, inedible	884,685	.....	.....	.....	786,456	141	2	12	97,441	633
Grease	356,513	.....	.....	.....	256,886	94	.....	410	98,370	753
Neat's-foot oil	5,550	.....	.....	.....	19	28	.....	.....	5,498	5
Marine mammal oils.....	26,885	.....	.....	.....	19,250	48	.....	7	7,580	.....
Fish oils	179,515	10,902	.....	.....	88,661	30,787	15,001	179	33,636	349

*Includes 31,075 thousand pounds reported by the tin and terne plate industry.

New Products and

Shulton's floor display cabinet for the "Early American" line won a first award in the floor stand division of the recent tenth annual All-America Package Competition. Supplied by Arvey Corp., Chicago.

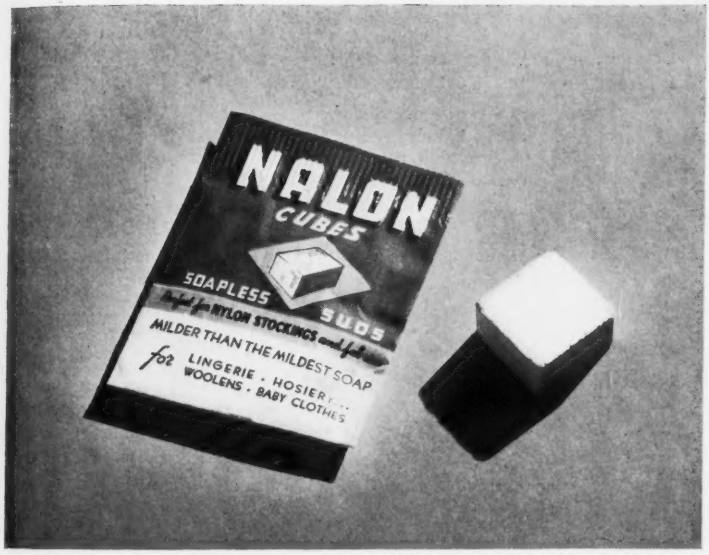


A conditioner for refrigerators, "Aer-Aid," has just been put on the market by American Products Co., Cincinnati, makers of "Veeco" products. It combines a deodorizer with a handy refrigerator thermometer.

Soap for toilet and bath is a prominent item in the new "Moss Rose" line of Charles of the Ritz, New York. The cakes are wrapped in white lace paper and boxed in a pink and white striped container supplied by Karl Voss Corp.

Packages

Yardley & Co., New York, have recently introduced a new guest room size of "Old English Lavender" toilet soap. The smaller cakes are an exact copy of the larger size. They retail at 55c per box of three.



"Nalon" soapless suds cubes are a new introduction by Rose-Martin, Inc., New York. Cubes are packed thirty to the box in individual envelopes. They are offered for washing dishes, fabrics, etc. A nation-wide promotion campaign is reported planned. Manufacturer of the new item is Naylee Chemical Company, Philadelphia.

A new label had just been designed for "Sohio" shampoo, product of Standard Oil Co. of Ohio, by McCann-Erickson, Inc., New York. They continue use of the Owens-Illinois "handy grip" specially shaped bottle.

NEWS....

Soap Toy Plant Opens

Work began recently at the Hebron, Ind., branch of Foame Toy Soap Co., Valparaiso, Ind., where soap toys fashioned in the shapes of animals, dolls, etc., and covered with colored sponge rubber are being made by hand. The factory is in the old Hebron high school building and utilizes about 28,000 square feet of floor space. At the present time, twenty persons are employed in the branch. According to Albert Serewicz, owner-manager, it is expected that the force will be increased to 50 or 60 persons in the near future. Other plants owned by the Foame Toy Company are located at Valparaiso, Ind., and Toronto, Ont.

Ralston to Address Chemists

The derivation of fatty acids from fats and oils and their use as reactants in a wide variety of chemical syntheses, will be described by Dr. A. W. Ralston, of Armour & Co., Chicago, before a meeting of the American Institute of Chemists to be held in the Chemists' Club, New York, on April 4.

Installs Continuous Units

Refining, Inc., which recently moved from Long Island City to Charlotte, N. C., in order to be closer to the vegetable oil producing section, recently installed a continuous soap plant unit and a plant sized vegetable oil refinery in its research laboratory. Units will be used for demonstrating their processes to prospective users as well as for large scale research operations on by-products, it has been announced. The processes employed by the company were developed by Benjamin Clayton, head of Refining, Inc., in his Los Angeles research laboratories. B. H. Thurman, former vice-president of American Linseed Co., Best Foods, Inc., and Durkee Famous Foods, is in direct charge of the company's activities. Research is conducted under the supervision of Dr. M. Mattikow.

C-P-P Supervisor Dies

Clifford E. Kinney, sales supervisor in the New York metropolitan area for Colgate-Palmolive-Peet Co., Jersey City, died recently in his home at Flushing, N. Y. He was forty years old.

West Indies Firms Merge

Drax Hall Estate, soap manufacturer, and Soap & Edible Products Co., Kingston, Jamaica, B.W.I., recently merged with all operation being continued at the factory of the latter company. Soap manufacture at the factory of the Drax company has been discontinued.

Retired P & G Executive Dies

Harold E. Blanchford, formerly in charge of the industrial division of Procter & Gamble Distributing Co., New York, who retired three years ago, died last month at his home in New York. He was sixty-nine years of age. A native of London, Mr. Blanchford came to the United States about thirty years ago and soon after joined the P & G organization.

To Develop Mexican Coyol Oil

A company has recently been formed in Mexico to develop the production of coyol oil, which is obtained from a species of palm and is said to be a good substitute for coconut oil, according to a report received by the Office of Foreign Agricultural Relations, Washington, D. C.

Oil Trades Assn. Elects

At the annual business meeting of the Oil Trades Assn. of New York, held March 25, at the Waldorf-Astoria Hotel, New York, the following officers were re-elected: president, William H. Correa, of Socony-Vacuum Oil Co.; vice-president, W. M. Osborn, of Zimmerman, Alderson, Carr Co.; secretary, Joseph C. Smith, of Smith-Weiman Co.; and treasurer, R. G. Sonneborn, of L. Sonneborn Sons, Inc. The following were elected as directors: C. V. Bacon, J. W. Baker, G. L. Benjamin, J. H. Blakney, W. C. Burns, W. H. Correa, D. E. Hoffman, W. M. Osborn, L. C. Quackenbush, J. F. Renick, J. C. Smith, R. G. Sonneborn and A. J. Squier.

New Ford Cleansing Agent

Development of a new detergent material for cleaning metals before they are plated was reported recently by J. B. Ford Co., Wyandotte, Mich. It is claimed that aluminum and light metal alloys are given greater protection against corrosion by bathing them in the solution and that the new solution aids in increasing the adherence of plating.

Check Breck Shampoo Claims

John H. Breck, Inc., Springfield, Mass., has just entered into a stipulation with the Federal Trade Commission agreeing to abandon certain protested claims in the advertising of "Breck's Lather-Oil pH8 Shampoo" and other products. Claims that the product will quicken the growth of hair, delay graying or remedy eczema of the scalp and other such conditions will be abandoned, according to the stipulation.

James Addresses Farm Council

E. M. James of the research department of Lever Brothers Co., Hammond, Ind., spoke before the seventh annual conference of the National Farm Chemurgic Council, held March 26-28, in Chicago, on the subject "Fats and Oils in the Soap and Edible Industries." He referred to the indispensability of coconut oil in the soap kettle, commenting that the imposition of a processing tax in recent years has stimulated research for a substitute, which however up to this point has been without success. It may be that eventually the synthesis of fats from petroleum will solve this problem, he said, but such a development is still a long way in the future.

The soaps produced in the United States today, said Mr. James, show a vast improvement over those of twenty years ago. The demand for white soaps, he remarked, has necessitated the use of increasing quantities of light colored fats, and with supplies inadequate to supply all requirements, soap manufacturers have had to resort increasingly to hydrogenation, bleaching with clays and decolorizing treatments. Hydrogenated fish oils have come into more common use as a replacement for tallow, when the price of the latter has gone out of line, he pointed out. Hydrogenation of white grease also gives a stable fat suitable as a partial replacement for tallow. It has been frequently suggested, said Mr. James, that the tremendous stocks of edible lard now on hand might be reduced by diverting a portion to the soapmaker who could condition them for use by hydrogenation. This proposal has been defeated up to the present time by the high price of lard as compared with tallow.

Cudahy Gives Automobiles

A Nash car is being given away daily by Cudahy Packing Co., Chicago, as a major prize in a five-week contest for "Old Dutch Cleanser" which ends April 13. Awards are given to contestants supplying the best last lines to limericks.

Toohy Addresses Salesmen

John J. Toohy, sales manager of E. R. Squibb & Sons, Brooklyn, was guest speaker at the March 13 luncheon meeting of the Salesmen's Association of the American Chemical Industry held at the Waldorf-Astoria Hotel, New York.

Owens-Ill. Personnel Changes

Walter G. Thomas, who has been secretary-treasurer of Owens-Illinois Pacific Coast Co., San Francisco, since 1933, was recently elected vice-president and resident manager at Los Angeles. He will retain his title of treasurer. T. E. Manwarring, of the Los Angeles branch office, became branch manager and will assist Mr. Thomas in his sales function. John R. Brown, who has been Los Angeles branch manager since 1936, became sales manager of the newly created package sales division of the company with headquarters in San Francisco.

Hardin Chemical Moves

Hardin Chemical Co., sales division of J. L. Hardin Co., maker of drycleaning specialties, recently moved its sales offices from 70 Pine St., New York, to its factory at 1263 Atlantic Ave., Brooklyn, N. Y. All sales and promotional activities will be conducted from the new address.

Luxor Signs Wayne King Band

Wayne King and his orchestra, broadcasting over 33 CBS stations, every Saturday night at 7:30 p.m. EST, is now being sponsored by Luxor, Ltd., New York. Each week, as part of the program, six diamond rings will be given to the listeners who send in the six most interesting love letters.

Neuberg Opens Agency

William D. Neuberg, who has relinquished his active participation in the business of Neuberg Chemical Corp., New York, recently opened offices in the Graybar Building, 420 Lexington Ave., New York.

New R & H Wetting Agent

"Triton NE," a new wetting agent and detergent, just brought out by Rohm & Haas Co., Philadelphia, is described as a high molecular weight complex organic alcohol which, in combination with soaps, is said to increase detergent action and decrease scum formation. It is recommended by the manufacturer for use in salt or acid solutions or in hard water where ordinary surface active agents are salted out or inactivated. Said to be water soluble in all proportions, the new material is free from nitrogen, sulfur and any heavy metal salts, and emulsifies oils and hydrocarbon solvents.

P. & G. Chicago Premium Offer

Procter & Gamble Co. featured a flour sifter as a premium last month in a campaign in the Chicago district. It was given for two "American Family Flakes" box tops and two "American Family" soap wrappers. At the same time a regular small size package of "American Family Speed Flakes" was offered for one cent with each purchase of five bars of "American Family" soap.

Firmenich Expands

Firmenich & Co., New York, American distributors for Chuit, Naef & Cia., Geneva producers of aromatic chemicals and perfume specialties, are expanding their floor space at their present address, 135 Fifth Ave., N. Y., by taking over an additional floor in that building, according to R. C. Watson, general manager of the American company. The firm has heretofore occupied the ninth floor and has taken over the tenth floor for its laboratories, stock rooms and shipping department, now using the lower floor exclusively for office purposes.

Brillo 1940 Earnings Down

Net profit of Brillo Manufacturing Co., Brooklyn, for 1940 was $247,517, equal to $1.40 a common share, as compared to 1939 earnings of $321,067, or $1.90 a share.

Soapers at New York Beauty Show

NUMEROUS manufacturers of soaps and shampoos, as well as several distributing and supply companies were represented as exhibitors at a four-day convention of International Beauty Shop Owners, held March 17-20, at the Hotel Pennsylvania, New York, which was attended by some 30,000 owners of beauty shops and hairdressing establishments from all parts of the United States.

Among the exhibitors were Conti Products Corp., Laco Products, Inc., Lightfoot Schultz Co., J. Eavenson & Sons, Procter & Gamble Distributing Co., Kerk Guild, Inc., Marrow's, Inc., E. Frederics Co., Sales Affiliates, Inc., Admiracion Division of National Oil Products, Co., and Middlebrooke Lancaster, Inc.

Frank Shaider, of Conti Products Corp., New York, was in charge of that company's booth displaying "Concentrated Shampoo Granules" and "Conti Castile Soap." In charge of the exhibit of Laco Products, Inc., Baltimore, showing its line of rapid castile shampoos, was C. O. Young, sales manager. In the booth of Lightfoot Schultz Co., New York, was shown the company's line of soap novelties, featuring the new "Canteen Shower Soap" and a novelty chest of drawers containing five cakes of "Ariderma" super-fatted lanolin soap. Barney Atlas, sales manager was in charge and Lois Green was in attendance.

At the display of J. Eavenson & Sons, Camden, N. J., in charge of W. A. Payne, assistant sales manager, the company's line of shampoos for the beauty shop trade was shown. H. Baldridge, in charge of "Drene" sales, and W. McGowan represented Procter & Gamble Distributing Co. at the exhibition. A new Easter line of novelty soaps was on display by Kerk Guild, Inc., New York, in charge of W. E. Magid. Marrow's, Inc., Chicago, featured "Mar-O-Oil" soapless shampoo and "Super Foamy" soap shampoo at its booth which was in charge of A. N. Hudson, Eastern sales representative.

H. Arnold, of E. Frederics Co., Long Island City, was in attendance at his company's booth where a prewave shampoo was part of the display. "Inecto" shampoo formed part of the display of Sales Affiliates, Inc., New York, distributors, in charge of E. C. Sumner, New York district sales manager. At the Admiracion booth, in charge of George Leitner, sales manager, Adolphe, hair stylist, demonstrated hairdressing. "Nutrine" neutral lathering oil shampoo, and "Nutrine" shampoo paste were featured at the booth of Middlebrooke Lancaster, Inc., Brooklyn, in charge of L. E. Macy.

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BIMS Set Golf Dates

The first 1941 golf outing of the New York BIMS will be held May 15 at the Forest Hill Field Club, Bloomfield, N. J., it was announced recently. Succeeding rounds will be played as follows: June 26, White Beeches Golf and Country Club, Haworth, N. J.; July 31, Sleepy Hollow Country Club, Scarsboro-on-the-Hudson; Sept. 18, Lakeville Country Club, Great Neck, L. I.

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Swift $25,000,000 Bond Issue

Swift & Co., Chicago, announced on March 12 that they were preparing to file with the Securities and Exchange Commission, about April 1, a registration statement covering issues of $25,000,000 of debentures, consisting of 1-to 10-year serials and 20-term debentures. Prices and coupon rates were to be decided later, William B. Traynor, vice president and treasurer, stated. Proceeds will be used to pay off a like amount of outstanding 3¾ per cent first mortgage bonds.

SOAP SCRAP . . .

Holding down the percentage of soap scrap, and then using advantageously what scrap there is,—these are problems in any soap plant. A practical discussion of both of these problems by C. R. Kemp in an early issue!

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Settle P. & G. Tax Suits

Two suits involving $973,930.63 and interest, which Procter & Gamble sought to recover for taxes allegedly paid in excess on raw materials used in manufacturing soap and other products, have been compromised and settled by stipulations of dismissal filed in United States District Court in Cincinnati. Thomas J. Conner, collector of Internal Revenue, was defendant in both cases. In the first suit, filed November 17, 1938, Procter & Gamble sought to recover $285,066.64 and interest; the second suit, filed December 30, 1938, was for $688,863.99 and interest; both stating the money was due as a refund for processing taxes.

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C-P-P 1c Sale in Chicago

Colgate - Palmolive - Peet Co., were advertising a "1-cent sale" for "Palmolive" soap in Chicago last month. Purchasers of three cakes at regular price were offered an additional cake for a penny. Newspaper space was also utilized to urge women to submit their entries in the "Super Suds" contest which closed March 29 and in which $100,000 in U. S. saving bonds is to be distributed on April 22.

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R. E. Scott Joins Quaker

R. E. Scott, former chief chemist of Marlin-Rockwell Corp., Jamestown, N. Y., has just joined the technical sales force of Quaker Chemical Products Corp. in the northern Ohio territory, with headquarters at Berea, Ohio.

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Rainbow Soap Co. Moves

Rainbow Soap Co., San Francisco, is now located at a new address at 650 Mission St. The company was formerly located at 683 Howard St.

U.S.I. ALCOHOL NEWS

April ★ A Monthly Review of Technical Developments for Chemists and Executives ★ 1941

ALCOHOL IN FLAVORING EXTRACTS

The delicious flavors of ice cream, cakes, and other food products depend on flavoring extracts, in which pure ethyl alcohol is the preferred solvent for the vanilla or other essential oils.

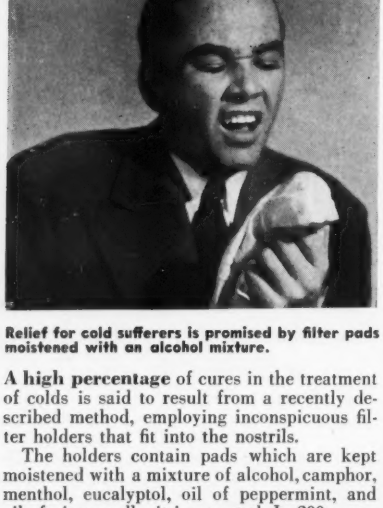
Acts as Solvent and Preservative, Gives Easy Mixing, Good Aroma

An outstanding application of pure ethyl alcohol is its use as the solvent in food flavoring extracts. In addition to being an excellent solvent for essential oils, such as vanilla, lemon, almond, peppermint, and wintergreen, alcohol possesses many other advantages for this application.

It is a highly effective preservative, contributing anti-mold properties to the extract. Moreover, it aids in preventing separation in the product, particularly when exposed to low temperatures. Alcohol thus assists in keeping flavoring extracts fresh and salable, even when stored for a long time.

Use of alcohol also results in an extract of low viscosity, permitting easier and more thorough mixing. As an added advantage, the alcohol acts as a carrier for the odor of the essential oil, thus giving the product a pleasant aroma, which is particularly important in food products.

EFFECTIVE CURE OF COLDS CLAIMED FOR NOSE FILTERS



Relief for cold sufferers is promised by filter pads moistened with an alcohol mixture.

A high percentage of cures in the treatment of colds is said to result from a recently described method, employing inconspicuous filter holders that fit into the nostrils.

The holders contain pads which are kept moistened with a mixture of alcohol, camphor, menthol, eucalyptol, oil of peppermint, and oil of pine needle, it is reported. In 200 cases, the method is said to have brought cures to 136 patients within 12 hours.

TECHNICAL DEVELOPMENTS

For further information write U.S.I.

A lilac perfume oil recently placed on the market is described as low in price and especially suitable for soaps. **(No. 440a)**

A new disinfectant is said to be odorless, powerful, yet easily handled. It is safe to use in homes, dairies, and public buildings, it is claimed. **(No. 441a)**

A permanent wave ingredient is reported to produce a tight wave and to leave no residue. Maker describes it as a clear, slightly yellowish, viscous liquid with an anti-oxidant effect. **(No. 442a)**

A new powder base is said to be a soft white powder characterized by high adhesiveness, good covering power, excellent slip, easy spreadability. **(No. 443a)**

An odorless depilatory is said to be available through a private label house which holds patents covering the product. **(No. 444a)**

A new rose product is said to possess the attributes of natural rose, and to be suitable for replacing it in any formula without loss in quality. **(No. 445a)**

A wetting agent is said to be non-toxic and to have a minimum of undesirable odor or taste. According to the manufacturer, it is especially suitable for such products as soapless shampoos, brushless shaving creams, and liquid dentifrices. **(No. 446a)**

An original violet odor now on the market is said to offer interesting possibilities in the formulation of a wide range of cosmetic products. **(No. 447a)**

A new antiseptic agent is said to have unusually high bactericidal power. According to the maker, it has many uses in disinfectants and as a personal antiseptic agent in combination with caustic soda or soap. **(No. 448a)**

LIQUID LIP ROUGES PRODUCE FILMS OF HIGH PERMANENCY

New market for alcohol has been opened by the introduction of liquid lip rouges which are said to have a high degree of permanency. The liquids are essentially lacquer-like in their formulation, employing a film-forming agent, a solvent, and a plasticizer.

According to a recently issued patent, a preferred composition utilizes ethyl cellulose as the film forming agent. Ethyl alcohol is described as the most suitable solvent, either alone or in mixtures with smaller quantities of petroleum ether.

Proclamation Restricts Exports

Glycerin, cresylic acids, cresol, pine oil, coconut oil, copra, palm-kernel oil, palm-kernels, and fatty acids produced from certain vegetable oils were included in a list of materials which cannot be exported from the United States, except when authorized by a license, according to a Presidential proclamation which became effective on March 10. Additional regulations governing the exportation of materials to expedite the strengthening of the national defense, pertained to phosphates, phosphate rock, phosphoric acid, phosphorus, superphosphate, borax, boric acid, and borates. The exportation of any information relating to the processes by which the banned materials may be manufactured was also prohibited except when licensed.

Chem. Salesmen Golf Schedule

Golf tournaments of the Salesmen's Association of the American Chemical Industry are to be held during 1941 as follows: June 10,—Wingfoot Country Club, Westchester, N. Y.; July 8,—Plandome Golf Club, Plandome, L. I.; August 12,—some club in New Jersey, details to be announced later. In addition, a special 20th Anniversary Outing including a final golf tournament, an outdoor steak barbecue, and other entertainment is tentatively planned for September 5th, 6th and 7th.

P & G Reduces Radio Outlay

Procter & Gamble Co., Cincinnati, radio's biggest advertiser, last month cancelled a large percentage of its air time, the twenty shows cancelled representing a cut in P & G's radio billings of probably something over $2,000,000 a year. Last year, its gross billings, computed at one-time rates, on the networks hit nearly $11,000,000. In explaining the "readjustments," the company stated, "A recent study of our radio expenditures led us to the conclusion that we could . . . cancel a few programs without affecting the broad coverage . . . While these recently announced changes are a little heavier than usual, our action is in no way an indication of a shift from radio as a medium. The changes will have but little effect on the total advertising expenditures for 1941."

McNutt Speaks at DCAT Banquet

Paul V. McNutt, Federal Security Administrator, was guest speaker at the 16th annual banquet of the Drug, Chemical and Allied Trades Section of the New York Board of Trade, held March 13, at the Waldorf-Astoria Hotel. As usual, a large body of executives from the insecticide industry were numbered among the nineteen hundred representatives of the drug, chemical and allied trades who were in attendance. John J. Toohy, of E. R. Squibb & Sons, chairman of the section, acted as toastmaster. In his talk, Mr. McNutt emphasized the importance of the drug and chemical industries to the national defense and stressed the need for friendly relations between the United States and the countries of South America from the standpoint of national defense.

Bentonite Co.'s Pay Fines

Five corporations and eight individuals accused of conspiring to restrain trade in bentonite by their use of patents relating merely to the mixture of bentonite with foundry sand were recently fined a total of $30,000 in the New York Federal District Court. Companies fined were as follows: American Colloid Co. of Lead, S. D.; Wyodak Chemical Co., Cleveland; F. E. Schundler Bentonite Co., Belle Fourche, S. D.; Whitehead Brothers Co., New York; and Processing Corp. of America, Jenkintown, Pa. In addition, certain officers of the companies were fined.

Baker Joins Quaker

Edwin R. Baker recently joined Quaker Chemical Products Corp., Conshohocken, Pa., as head of the company's laboratory sales and service department serving the textile industry. G. H. Rhodes, who has been in charge of this department is now heading the textile research and development department.

Propose Mass. Toiletries Tax

A bill imposing a 3% tax upon sale of tangible personal property at retail, to be paid by the vendor, affecting such items as dentifrices, toilet soaps, and mouth washes, was recently introduced into the Massachusetts House of Representatives as House Bill No. 1297. The bill provides that every person engaging in the sale of taxable tangible personal property at retail shall register with the Commissioner and pay the sum of one dollar. It would also impose an excise tax of 3% on the purchase price to be collected from every person using any article of the type mentioned.

Fritzsche V-P Dies

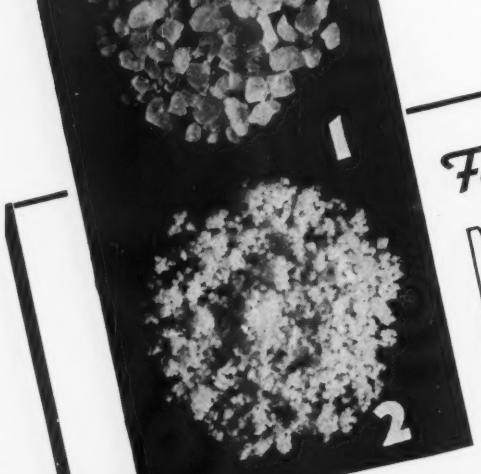
Benedict F. Zimmer, vice-president and western sales director of Fritzsche Brothers, Inc., New York, died at his home in Chicago on March 16. Mr. Zimmer was born in Chicago in 1878 and joined Fritzsche Brothers in 1901. He was put in charge of the Chicago office about 1906 and, at the company's incorporation in 1919, was elected vice-president in charge of western sales. Among his many activities, he was a member of the Chicago Drug and Chemical Association, of which he was a past president, and a member of the Chicago Perfumery, Soap and Extract Association.

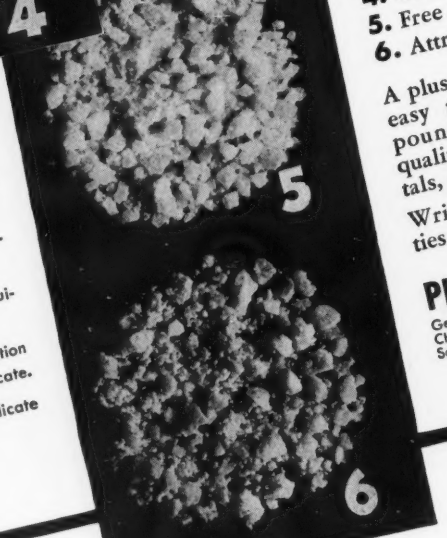
Lieut. Bruce MacCallum Dies

Flight Lieutenant Bruce MacCallum, of MacCallum Manufacturing Co., Toronto, soaps and cleaning supplies, was killed in action September 14, 1940, at the time of the Dakar incident. A member of the Royal Air Force, he was first reported missing, but recently reports of his death were confirmed.

C-P-P Coast Free Offer

Certificates, each good for a free cake of "Palmolive" soap are being distributed from door to door in California cities by Colgate-Palmolive-Peet Co. The certificate is redeemed by the dealer when the customer buys two cakes of "Palmolive" soap.





For Packaged or Bulk Cleaners

METSO

SODIUM METASILICATE
SODIUM SESQUISILICATE

6 GRADES—6 DISTINCTIVE QUALITIES

CLEANERS which contain large proportions of Metso Sodium Metasilicate or Metso 99 (Sodium Sesquisilicate) receive buyer preference because of these advantages:

1. Proper silica balance—which restrains corrosive action
2. Active alkalinity—to insure fast cleaning
3. Well buffered to give sustained cleaning
4. Greater bactericidal effect
5. Free rinsing qualities
6. Attractive appearance

A plus value to you—Metso alkalies are easy to work in your special compounds due to uniform dependable quality and various particle sizes—crystals, granules or fines.

Write for full information about properties and uses as well as laboratory samples.

PHILADELPHIA QUARTZ CO.

General Offices and Laboratory: 125 S. Third St., Phila., Pa.
Chicago Sales Office: Engineering Bldg. Stocks in 60 cities.
Sold in Canada by National Silicates Ltd., Toronto, Ont.

1. **METSO GRANULAR.** Sodium Metasilicate, granulated product.
2. **METSO CRYSTALS.** Purest form of Sodium Metasilicate. Uniformly sized crystals.
3. **METSO FINES.** Sodium Metasilicate, finely powdered.
4. **METSO 99.** Pure Sodium Sesquisilicate.
5. **METSO 22.** Integral combination containing Sodium Metasilicate.
6. **METSO 66.** Special Metasilicate cleaner for metals.

U. S. Pat. 1898707
U. S. Pat. 1948730

Soaps at Chicago Beauty Show

Procter & Gamble Co., Cincinnati, staged an elaborate presentation of their "Drene" shampoo at the Midwest Beauty Trade Show in Chicago, March 3 to 5. Several hundred beauticians were constantly in attendance to hear eight nationally known hair stylists discuss hair fashions, and to watch them manipulate the shampoo to obtain desired results. Included in the background decorations of the platform was a display of P. & G. toilet and laundry soaps, soap powders and other cleaning products. H. D. Baldridge of the Cincinnati office was in charge, assisted by a large staff of salesmen.

Helene Curtis Industries, Chicago, displayed 13 different shampoo soaps for treating various types of hair. All products are manufactured in the soap department of the company's extensive beauty products factory, according to K. Sachs, sales manager, who was in charge.

Conti Products Corp., New York, showed a large exhibit of their "Conti" concentrated shampoo granules. Frank J. Schaider, New York manager of the company's beauty division, talked "profits and prestige" while his assistants distributed sample packages of the granules.

Raymond Laboratories, Inc., St. Paul, Minn., demonstrated their various cosmetic products, including "Ray-fluff" paste shampoo. Mark Arend, sales manager, directed the work with Miss Marie Stefan as head demonstrator.

Lightfoot Schultz Co., New York, presented an extensive display of soap novelties for re-sale by beauty shop operators. Prominent in the new Spring designs, all in soap, were Easter bunnies, early seasonal flower shapes and "Baby Pegasus," modelled after the Winged Horse in Walt Disney's "Fantasia." Also shown was a new product, "Ariderma," soap, whose formula makes it desirable for dry skins, it was explained. For its display in shops a specially designed patented carton is provided. B. L. Marx, B. Atlas and Karl Mainlok of the New York office constituted the sales staff at the booth.

Parker-Herbex Corp., Long Island City, N. Y., introduced their "Herbex" glycerine soap solution under the direction of M. Fischer, president of the New York Hair Co. General Beauty Products Co., Chicago, featured "Bubble Bath," a water softener and odorizer manufactured by Trylon Products Corp., Chicago. Middlebrooke Lancaster Corp., New York, included several shampoo soaps in their display of "Nutrine" beauty products and Boyer Laboratories, Chicago, exhibited their line of castile soaps with other cosmetic products.

Report 1939 Plant Expenditures

Total capital expenditures for plant and equipment for 1939 reported by establishments which accounted for 94.7% of the value of products manufactured in the soap and glycerine industry were $8,687,877, according to preliminary figures compiled from the returns of the 1939 Census of Manufactures, recently released by the U. S. Department of Commerce. The remaining establishments, which accounted for 5.3% of the total value of products, did not report any expenditures for plant and equipment. The major portion of expenditures in the industries represented purchases of new machinery, valued at $5,977.039, new construction or major alterations at a cost of $1,836,687, and plant and equipment acquired in a "used" condition and land at $862,321.

Swift Runs Dealer Contest

Swift & Co., Chicago, is offering a Buick and a Dodge car as major prizes in its seventh annual dealer display contest for "Sunbrite" cleanser. Begun March 24, the contest will run to May 3.

Eller Fritzsche Cincinnati Mgr.

Walter M. Eller, formerly of the Philadelphia branch of Fritzsche Brothers, Inc., New York, was recently named manager of the Cincinnati office of the company where he succeeds his late father James R. Eller.

P & G Sues Perkins Pies

Procter & Gamble Co., Cincinnati, who sponsors the Ma Perkins daily radio program, recently filed preliminary papers in an equity suit for damages and an application to restrain use of the trade name against Ma Perkins Pies, Inc., Buffalo, N. Y., bakery. The bakery entered business in 1939, while the character of Ma Perkins has been used by P & G through seven years of newspaper and radio advertising, during which time, the P & G company contends, the character has become so real to the public that the bakery is using a valuable trade property of P & G for its own benefit.

Leeds Soap To Build

Leeds Soaps, Ltd., Toronto, Canada, have acquired a half acre site at 27 Newcastle Street, Mimico, Ont., and are erecting a single story plant extending to a depth of 100 feet from the street.

FTC Acts on Slack Filling

The Federal Trade Commission recently ordered Marlborough Sales Co., Madison Sales Corp., and Windsor Manufacturing Co., all of New York, to desist from making certain claims in the sale of shaving creams and tooth pastes. According to commission findings, the companies engaged in "slack filling" of large cartons with ordinary-sized tubes of shaving creams and tooth pastes so that the ordinary-sized units appeared to be "giant size." It was also said that the companies marketed their "Palm and Olive Shaving Cream" in containers and packages simulating in color and appearance those of "Palmolive Shave Cream"; that they represented as the regular retail prices of certain shaving creams, fictitious prices which were in excess of the regular prices; and that they used the words, "Doctors, Dentists, Surgeons" and the letters "D.D.S." in describing dentifrices which had not been made under the direction of dentists or medical doctors. The commission order directs the companies to cease these practices.

Revise Soap Definitions

CONSIDERABLE progress was reported by committee D-12, soap specification committee of the American Society for Testing Materials, in its work on soap standardization, testing and definition at its annual meeting held March 10th and 11th at the Hotel New Yorker, New York City. Principal developments of the two-day session, presided over by Harry P. Trevithick, of the New York Produce Exchange, were a series of new revisions in definitions of soap terms and the raising to standard of previously tentative standards for methods of testing soaps, methods of testing sulfonated oils and for specifications for palm oil solid soaps, specifications for olive oil solid soaps, and specifications for built powder and alkaline powder. Tentative standards for olive oil chip soap and for testing tetrasodium pyrophosphate were also adopted, and tentative specifications for metal cleaners were discussed.

Guest speakers at the general meeting were W. D. Pohle, of the United States Department of Agriculture, who spoke on rosins and rosin soaps, and I. M. Diller, of Hellige, Inc., Long Island City, N. Y., who spoke on the use of the photoelectric cell for the measurement of the color of liquid animal and vegetable oils.

R. E. Divine, Hooker Electrochemical Co., Niagara Falls, N. Y., was elected to replace Dr. L. B. Hitchcock as a member of the advisory board.

On the recommendation of the sub-committee on definitions in a report submitted by Charles A. Marlies, tentative definitions for alkali detergent (changed to alkaline detergent), anhydrous soap content (changed to anhydrous soap), built soap, detergent, and soap powder were revised, tentative definitions for detergent soap powder and soapy alkaline detergent were withdrawn and new tentative definitions for dry cleaning, scouring and soil were added. The complete list of tentative definitions as presented is as follows:

Soap—The product formed by the saponification or neutralization of fats, oils, waxes, rosins, or their acids with organic or inorganic bases.

Alkaline Detergent—A water-soluble alkali having detergent properties but containing no soap.

Anhydrous Soap—Pure soap.

Blended (e.g., Palm Oil) Soap—A soap in which at least 51 per cent but not all of the fatty acid stock is from the source named (i.e., palm oil).

Builder—Any material added to soap to improve its effectiveness under the conditions of use.

Built Soap—A mixture of soap and one or more builders containing not less than 50 per cent of anhydrous soap.

Cleaning—A process of removing undesirable matter.

Detergent—Any material which cleans.

Filler—A material added to a soap or other detergent which does not improve its attractiveness or its effectiveness under the conditions of use.

Pure (e.g., Palm Oil) Soap—A soap in which the fatty acid stock is solely from the source named (i.e., palm oil).

Dry Cleaning—A process of cleaning in liquid medium, which is substantially non-aqueous.

Scouring—A wet process of cleaning by chemical or mechanical means or both.

Soap Powder—A mixture of soap and one or more builders, containing not more than 50 per cent of anhydrous soap.

Soil—Undesirable matter to be removed by cleaning.

Straight Soap—Commercially pure soap in which the sum of free alkali, total matter insoluble in alcohol and sodium chloride does not exceed 4 per cent.

Washing—A process of cleaning in aqueous medium.

It was further recommended and adopted that the subtitle "Alkaline Soap Powder" of specification D534-39T be preferred as more appropriate and descriptive than the main title "Soap Powder."

The new tentative standards for testing soap as presented by M. L. Sheely include a new method for the determination of carbon dioxide as carbonates, the train absorption method being retained as an alternate. The Wolff method for the determination of rosin was deleted and certain editorial changes were made in the text, relating to the determination of carbon dioxide, of starch, of potash and of phosphates. The comment was made that in the determination of moisture in soap by distilling over xylol, when more than 1 per cent of glycerine is present, inaccuracies result because of some of the glycerine being carried over. It was recommended that in these cases toluol be used in place of xylol.

Tentative standard methods of testing sulfonated oils were raised to permanent standards on the recommendation of Ralph Hart, chairman. It was reported that the work on volatile solvents had not yet been completed.

As the methods for testing tetrasodium pyrophosphate had been found reliable and good agreement had been attained among different laboratories, the methods were adopted as tentative standards. Work on methods for sodium orthosilicate was reported as incomplete.

On the recommendation of the subcommittee on textile soaps, as submitted by C. L. Nutting, tentative standards for specifications of palm oil solid soap, both pure and blended types, were raised to standard. Specifications for palm oil chip soap were also divided into two

(*Continued on Page* 49)

CONTRACTS AWARDED

Metal Cleaner Awards

In a recent opening by the Army Ordnance, Rock Island Arsenal, Ill., Pennsylvania Salt Mfg. Co., Phila., was awarded a contract for 50,000 lbs. metal cleaner in 400-lb. one way shippers at 5.58 cents.

Panama Canal Bids

The following low bids were submitted in a recent opening by the Panama Canal, Washington, D. C.: Chemical Mfg. & Dist. Co., Easton, Pa., 30,000 lbs. soap powder, $891; Armour & Co., Chicago, 15,000 cakes floating toilet soap, $157.28 and 4,000 lbs. chip soap, $168; Colgate-Palmolive-Peet Co., Jersey City, 7,500 lbs. laundry soap, $225 and 6,000 lbs. salt-water soap, $144; Stevens Soap Corp., Bklyn., 20,000 lbs. trisodium phosphate, $876; Pioneer Soap Co., San Francisco, 2,000 lbs. scouring powder, $74.

Cleaner Award

R. M. Hollingshead Co., Camden, N. J., was awarded a contract for 5,250 gals. aircraft cleaning compound at 72 cents in a recent opening by Army Air Corps Supplies, Wright Field, O.

Rust Preventive Award

The Army Quartermaster Corps, Chicago, recently awarded R. M. Hollingshead Corp., Camden, N. J., a contract for 20,000 lbs. rust preventive compound at 6.7 cents.

Air Corps Award

Globe Solvents Co., Phila., was recently awarded a contract by the Army Air Corps Supplies, Wright Field, O., for 76,744 gals. dry cleaning solvent at 13.1845 cents.

Soap Awards

M. H. Fairchild & Bro., Chicago, was awarded a contract for 15,000 cakes of toilet soap at 2.83 cents, in a recent opening by the Army Quartermaster Corps, Jeffersonville, Ind. In the same opening Colgate-Palmolive-Peet Co., Jersey City, received a contract for 160,000 lbs. of laundry soap at 3.28 cents.

Saddle Soap Award

In a recent opening by the Army Quartermaster Corps, Rock Island Arsenal, Ill., R. M. Hollingshead Corp., Camden, N. J., was awarded contracts for 15,000 lbs. saddle soap, in 1-lb. tins, del., and 10,000 lbs., at 8.8c. lb.

Product Stops Belt Slippage

A new product recently put on the market by Warren Pulley Cover Co., Danielson, Conn., is said to eliminate most of the power loss caused by slipping pulley belts.

Soap Definitions Revised

(*from Page* 47)

classes, A (pure) and B (blended) and remain in the changed form as tentative standards. In raising the tentative standards for olive oil solid soap to permanent standards, it was brought out that through a typographical error the specification of maximum free fatty acid had been omitted when published. Free fatty acid content should not exceed 0.2 per cent. One minor change was made in that the specification for titre range was changed to 16-26 instead of 16-25. Tentative standards for olive oil chip soap providing for types A and B, pure and blended, were adopted.

Fred J. Krassner, chairman of the section on built soaps, recommended that specifications for scouring powder be brought up to date. The tentative specifications for built powder and for alkaline powder were adopted as standard.

It was reported by the section on specifications for special detergents, headed by C. C. Ziegler, that the question of writing specifications for sodium orthosilicate was being tabled for another year's study. The tentative standard specifications on tetrasodium pyrophosphate, in view of the hygroscopicity of TSPP, were characterized as being too rigid and not yet ready to be advanced to permanent standard. Specifications for sodium sesquisilicate and sodium metasilicate were moved up from tentative to standard. The specifications for trisodium phosphate will be kept as tentative until further study definitely establishes its chemical structure.

J. C. Harris, chairman of the section on specifications for metal cleaners, submitted revised methods of analysis and proposed tentative standards were adopted.

In his brief talk on rosin soaps, W. D. Pohle, of the U. S. Department of Agriculture, mentioned that extensive reports on rosin soaps had been made by the department in 1940, including reports on detergency and germicidal activity. Preliminary investigations of germicidal activity indicated, he said, that rosin soaps have a higher action than fatty acid soaps. More work will be done by the department on any particular phase of the applications of rosin soaps in which interest is shown, he said, for the desire of the department is to promote the use of rosin in soaps in those places where its use is justified. Suggested uses were in hand soaps, in flakes, chips and powders and in mixtures with alkaline detergents where germicidal activity is required.

Speaking on the use of a standardized instrument for measuring and designating the color of liquid animal and vegetable oils by means of a photoelectric cell, I. M. Diller explained that the new instrument can be used successfully to replace the Lovibond method of measuring color. The instruments are standardized against chemical solutions and can be standardized with precision, said Mr. Diller, thus permitting the attainment of accurate and reproducible results.

Over 55 Years

IN THE U. S. A.

Over 30 Years

IN CANADA

"WE ARE PROUD OF THIS RECORD"

•

BERGAMOT LAVENDER
GERANIUM YLANG YLANG

CREATED IN "G.L." LABORATORIES TO SIMULATE THE NATURAL OILS CONSUMER ACCEPTANCE CERTIFIES THEIR HIGH STANDARD OF QUALITY

•

GEORGE LUEDERS & CO.

Established 1885

427 WASHINGTON STREET, NEW YORK, N. Y.

BRANCHES: CHICAGO • SAN FRANCISCO • MONTREAL

★

TRADE MARKS

The following trade-marks were published in the March issues of the *Official Gazette* of the United States Patent Office in compliance with Section 6 of the Act of September 20, 1905, as amended March 2, 1907. Notice of opposition must be filed within thirty days of publication. As provided by Section 14, fee of ten dollars must accompany each notice of opposition.

Trade Marks Filed

JOHNSON'S BLEM — This in solid letters describing cleaner. Filed by S. C. Johnson & Son, Racine, Wis., July 22, 1940. Claims use since Aug. 8, 1938.

GLISTEN—This in solid letters describing soap flakes. Filed by Charles Herman Co., New York, Jan. 9, 1941. Claims use since Dec. 16, 1940.

JOY SUDS—This in solid letters describing water softener. Filed by Hylo Co., Houston, Tex., Dec. 5, 1939. Claims use since Oct. 24, 1939.

AMBROCIDE—This in solid letters describing insecticide. Filed by A. D. Chapman & Co., Chicago, Jan. 2, 1940. Claims use since Dec. 23, 1939.

LYCTOCIDE—This in solid letters describing insecticide. Filed by A. D. Chapman & Co., Chicago, Jan. 2, 1940. Claims use since Dec. 23, 1939.

CRYSTAL WHITE — This in solid letters describing glycerine. Filed by Colgate-Palmolive-Peet Co., Jersey City, Jan. 10, 1941. Claims use since 1930.

AMERICAN BEAUTY — This in script letters describing polish. Filed by General Tire & Rubber Co., Akron, O., July 30, 1936. Claims use since June 3, 1936.

STAR—This in gold letters over red star describing cleanser. Filed by Star Chemical Co., Chicago, Apr. 18, 1938. Claims use since Sept. 1, 1936.

JOHNSON'S SHUR-TRED — This in solid letters describing polish. Filed by S. C. Johnson & Son, Racine, Wisc., July 22, 1940. Claims use since Oct. 14, 1938.

ESCO—This in outline letters over black star describing embalming soap. Filed by Embalmer's Supply Co., Westport, Conn., Nov. 30, 1939. Claims use since Jan. 31, 1910.

PERMOSOL—This in solid letters describing cleaner. Filed by Permorite Products Co., Los Angeles, Calif., Dec. 16, 1940. Claims use since Oct., 1936.

MY-DOG—This in solid letters describing soap. Filed by Manhattan Soap Co., New York, Dec. 24, 1940. Claims use since Dec. 15, 1940.

BRIDAL-PAC — This in script letters describing shampoo. Filed by Bridal-Pac, Inc., Manitou Springs, Colo., Sept. 5, 1940. Claims use since Jan. 2, 1940.

VERNILLE—This in semi script letters describing shampoo. Filed by Vernille Studios, Oakland, Calif., Dec. 24, 1940. Claims use since Oct., 1938.

MOTH FOE—This in solid letters over drawing of moth describing insecticide. Filed by Duratex Chemical Corp., New York, Dec. 26, 1940. Claims use since Sept. 1, 1939.

ELISE—This in solid letters describing shampoo. Filed by Simon Kleinkramer, New York, Jan. 4, 1941. Claims use since Dec. 14, 1940.

TURELLE—This in solid letters describing shampoo. Filed by Simon Kleinkramer, New York, Jan. 4, 1941. Claims use since Dec. 14, 1940.

ECONOMITE — This in fancy letters describing polishing wax. Filed by Hall-Watson Co., New York, Dec. 30, 1940. Claims use since Dec. 21, 1938.

FACE SAVERS—This in solid letters describing shampoo and deodorant. Filed by Franz Koenigsberger, New York, Jan. 4, 1941. Claims use Jan. 2, 1941.

POW-DA—This in solid letters describing dentifrice. Filed by Mack Dental Co., Monterey, Calif., Jan. 27, 1941. Claims use since Dec. 14, 1940.

QUICK-WAY — This in fancy letters over representation of poster describing washing fluid. Filed by Patti Products, Geneva, N. Y., July 19, 1940. Claims use since May 1, 1935.

NYLON-NENE — This in solid letters describing fabric cleaner. Filed by Albert E. Victore, Chicago, Sept. 14, 1940. Claims use since Aug. 19, 1940.

TREET—This in solid letters describing cleaner. Filed by Addison-Proctor Co., Newark, N. J., Oct. 9, 1940. Claims use since Aug. 10, 1939.

SPOT-DOCTOR—This in script letters describing cleaner. Filed by Doyle Vacuum Cleaner Co., Grand Rapids, Mich., Nov. 30, 1940. Claims use since Oct. 17, 1940.

ECONOMITE — This in fancy letters describing soap. Filed by Hall-Watson Co., New York, Dec. 30, 1940. Claims use since Dec. 20, 1938.

RAP-I-DOL — This in semi script letters describing shampoo. Filed by Rap-I-Dol. Dist. Corp., New York, Dec. 24, 1940. Claims use since Oct. 24, 1924.

QUICK-CIDE—This in solid letters describing insecticide. Filed by Tersch Patents & Chemicals, N. Y., Dec. 27, 1940. Claims use since Nov. 13, 1940.

FIBERTONE — This in outline letters over black diamond describing mothproof. Filed by H. W. Featherstone & Co., Worcester, Mass., Dec. 31, 1940. Claims use since Oct. 1, 1940.

WALVET—This in fancy letters over outline V describing cleaner. Filed by Cleveland Cleaner & Paste Co., Cleveland, Aug. 12, 1940. Claims use since July 15, 1940.

KLE-CUE—This in solid letters under word Plee-Zing describing cleaner. Filed by Plee-Zing, Inc., Chicago, Oct. 9, 1940. Claims use since Sept. 7, 1940.

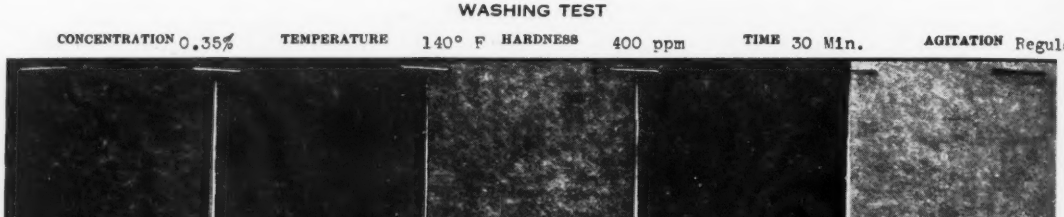
COMPARATIVE WASHING TESTS WITH ORDINARY SOAP BUILDERS CONFIRM THE SUPERIOR EFFECTIVENESS OF VICTOR

TETRA SODIUM PYROPHOSPHATE

DETERGENT LABORATORY REPORT

WASHING TEST

CONCENTRATION 0.35% TEMPERATURE 140° F HARDNESS 400 ppm TIME 30 Min. AGITATION Regular

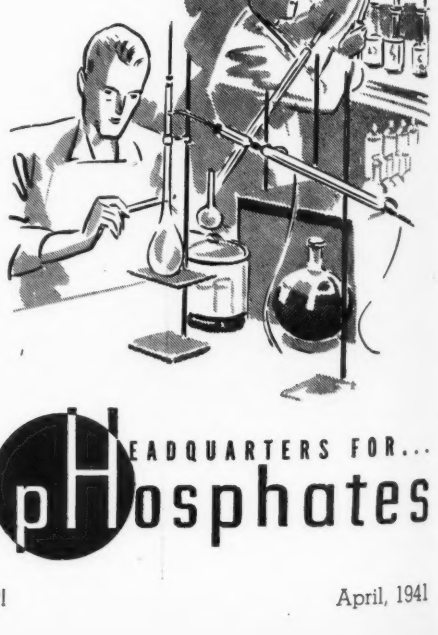


100% Soap	70% Soap 30% Soda ash	70% Soap 30% T.S.P.	70% Soap 30% 40° Silicate	70% Soap 15% Soda ash 15% T.S.P.P.
SUDS Trace	SUDS None	SUDS Trace	SUDS None	SUDS 1-1/2"
pH 8.9	pH 9.9	pH 9.4	pH 9.1	pH 9.6

DISCUSSION: Soil No. 10

THE improved washing effect that results from the use of tetra sodium pyrophosphate as compared with ordinary soap builders is strikingly demonstrated in the above test. Washing was done in water having a natural hardness of 400 ppm. The concentration of the soap mixture used was 0.35%; the temperature, 140°F. The cloth washed in the presence of Victor Tetra Sodium Pyrophosphate is unmistakably cleaner . . . yet no more soap was added than with the ordinary builders. May we send you a liberal sample for conducting your own tests?

VICTOR CHEMICAL WORKS, 141 W. Jackson Blvd., Chicago



VICTOR

HEADQUARTERS FOR...
pHosphates

OMEGA—This in outline script letters in black circle describing shoe polish. Filed by Omega Shoe Polish Co., Los Angeles. Nov. 7, 1940. Claims use since Aug. 5, 1937.

KLER-RO—This in outline letters on black oblong describing cleaner. Filed by Physicians & Hospitals Supply Co., Minneapolis, Nov. 27, 1940. Claims use since Aug. 16, 1940.

LAXITE—This in heavy solid letters describing metal cleaner. Filed by James J. Lax, New York, Dec. 31, 1940. Claims use since Sept., 1935.

NAR-O—This in solid letters describing shampoo. Filed by Nar-O Co., St. Louis, Dec. 30, 1940. Claims use since Dec. 26, 1918.

CLAIROL—This in heavy solid letters describing shampoo. Filed by Clairol, Inc., Stamford, Conn., Jan. 23, 1941. Claims use since Jan., 1931.

COLLOY—This in solid letters describing shampoo. Filed by William Cooper & Nephews, Chicago, Jan. 29, 1941. Claims use since Jan. 5, 1941.

IMULARV—This in solid letters describing moth proof. Filed by Richards Chemical Works, Jersey City, Feb. 1, 1941. Claims use since Jan. 25, 1941.

LARV-O-NIL—This in solid letters describing moth proof. Filed by Richards Chemical Works, Jersey City, Feb. 1, 1941. Claims use since Jan. 25, 1941.

SEPTANI—This in solid letters describing antiseptic. Filed by B. & M. Co., Grand Saline, Tex., Feb. 6, 1941. Claims use since Jan. 15, 1941.

CAR-GLO—This in outline letters describing polish. Filed by Albion & Sons, Cambridge, Mass., Nov. 22, 1940. Claims use since June 21, 1940.

SCARLETT—This in solid letters describing soap. Filed by Pinaud, Inc., New York, Jan. 17, 1940. Claims use since Jan. 10, 1940.

TARNEX—This in heavy solid letters describing cleanser. Filed by Hall-Watson Co., New York, Jan. 11, 1941. Claims use since Dec. 14, 1939.

GARDEN BOUQUET — This in script letters over flowered gateway describing soap. Filed by Manhattan Soap Co., New York, Jan. 25, 1941. Claims use since July 24, 1940.

PICCO—This in crossed solid letters over four leaf drawing describing insecticide bases. Filed by Pennsylvania Industrial Chemical Corp., Clairton, Pa., Mar. 23, 1940. Claims use since Feb. 1, 1925.

MISS POLAND—This in solid letters describing shampoo. Filed by Boris Feldman, New York, July 26, 1940. Claims use since July 15, 1940.

GREAT SEAL—This in solid letters describing antiseptic, tooth paste, shampoo and drain pipe cleaner. Filed by Styron-Beggs Co., Newark, Ohio, Sept. 24, 1940. Claims use since Jan., 1896.

GATOR ROACH HIVES—This in solid letters describing insecticide. Filed by DeSoto Chemical Co., Arcadia, Fla., Oct. 25, 1940. Claims use since 1925.

RING-A-MINT — This in solid letters over drawing of foot bottom inside black oblong describing athletes foot preparation. Filed by Foxx Co., New York, Oct. 29, 1940. Claims use since Sept. 10, 1940.

REINHARDT'S — This in solid letters over shaded oblong describing foot powder. Filed by Louis F. Reinhardt, Le Center, Minn., Nov. 27, 1940. Claims use since Oct. 25, 1940.

TEX-O-DOR—This in solid letters describing odorant. Filed by Givaudan - Delawanna, New York, Dec. 17, 1940. Claims use since Mar. 19, 1931.

SURGE—This in heavy solid letters describing insecticide. Filed by Babson Bros. Co., Chicago, Dec. 26, 1940. Claims use since Feb. 22, 1940.

NIAGARA—This in solid letters in circle over drawing of falls describing insecticide. Filed by Niagara Alkali Co., Niagara Falls, N. Y., Jan. 16, 1941. Claims use since Nov. 5, 1940.

Trade Marks Granted

385,435. Cleaner. Cleanser Prods. Co., Phila. Filed May 25, 1939. Serial No. 419,799. Published Sept. 19, 1939. Class 4.

385,448. Cleaner. Chrysler Corp., Highland Park, Mich. Filed April 8, 1940. Serial No. 430,486. Published Dec. 24, 1940. Class 4.

385,469. Floor Wax. Midwest Mfg. Co., Detroit. Filed Sept. 5, 1940. Serial No. 435,686. Published Dec. 24, 1940. Class 16.

385,473. Cleaner. A. A. Quality Prods., New York. Filed Sept. 16, 1940. Serial No. 435,995. Published Dec. 24, 1940. Class 4.

385,515. Paper cleaner. United Wall Paper Factories, Chicago. Filed Oct. 11, 1940. Serial No. 436,864. Published Dec. 24, 1940. Class 4.

385,555. Soap. Brillo Mfg. Co., New York. Filed Sept. 5, 1939. Serial No. 423,288. Published Dec. 31, 1940. Class 4.

385,581. Metal Polish. Sarah L. Logie, Cleveland. Filed July 29, 1940. Serial No. 434,450. Published Dec. 31, 1940. Class 4.

385,704. Soap. Carson Pirie Scott & Co., Chicago. Filed Nov. 15, 1940. Serial No. 437,893. Published Dec. 31, 1940. Class 4.

385,773. Cleanser. Papik Prods. Co., St. Louis. Filed May 13, 1940. Serial No. 431,873. Published Dec. 24, 1940. Class 4.

385,863. Floor wax. Candy & Co., Chicago. Filed Oct. 31, 1940. Serial No. 437,433. Published Jan. 7, 1941. Class 16.

385,864. Cleaner. Skour-Nu, Inc., New York. Filed Oct. 31, 1940. Serial No. 437,456. Published Jan. 7, 1941. Class 4.

385,866. Cleaner. Hecker Prods. Corp., New York. Filed Nov. 1, 1940. Serial No. 437,471. Published Jan. 7, 1941. Class 4.

385,868. Cleaner. National Labs., Toledo, O. Filed Nov. 2, 1940. Serial No. 437,540. Published Jan. 7, 1941. Class 4.

385,880. Soap. J. B. Williams Co., Glastonbury, Conn. Filed Nov. 8, 1940. Serial No. 437,708. Published Jan. 7, 1941. Class 4.

385,885. Detergent. Westwood Pharmacal Corp., Buffalo. Filed Nov. 22, 1940. Serial No. 438,166. Published Jan. 7, 1941. Class 4.

RAW MATERIAL MARKETS

As of March 25, 1941

NEW YORK — Prices of all important soap stocks and a large number of essential oils were advanced steadily during the past month as the feature development in the markets for raw materials for the manufacture of soaps and sanitary chemicals. Principal soap stocks are in the neighborhood of 1¼ cent per pound higher than a month ago. Figuring prominently in the advance are coconut oil, tallow, greases, babassu oil, soybean oil and palm oil. Business was decidedly more active, buying interest in various fats and oils being stimulated by advances in cottonseed oil and lard futures as well as a lack of any indication of a change for the better in the near future in the shortage of ocean tonnage, the upward tendency of freight rates and the uncertainty regarding future arrivals from abroad. With a few exceptions, price changes among the essential oils were in an upward direction, materials from the Far East being in the foreground of market events.

Candelilla wax was advanced during the past month, but other waxes remained much the same as a month ago, as did most of the items among the chemicals and the insecticide raw materials.

Animal Fats

The decline in lard production over the past four months due to reduced hog marketings, and the expectancy of reduced production of lard throughout 1941 were felt during the past month in sharply advancing prices on inedible tallow, greases and other animal fats. Extra tallow was advanced 1¼ cent from the price of a month ago to the present level of 6⅛ cents a pound, f.o.b. plant. Yellow house grease was advanced a similar amount to a current level of 5¾ to 5⅞ cents a pound. Sales of tallow during the past month took place at as high as 6¼ cents a pound, the highest price recorded for the material since the fall of 1939, while asked prices in tallow futures were as high as 6¾ cents a pound. Offerings were light on the rise. Domestic demand for fats is now stronger than it was a year ago and is expected to improve further this year. The effective foreign demand, however, continues weaker than at this time last year because of the blockade of most of continental Europe.

Vegetable Oils

Rising costs for ocean shipments since the first of the year have been reflected in higher prices for coconut oil and copra. Also a shortage of shipping space for coconut oil has resulted from the withdrawal of numerous British vessels equipped with deep-cargo tanks from the Philippines-United States run. Another factor behind the advanced prices for copra and coconut oil may have been the large purchases of copra in the Philippines by Russian and Japanese interests. Coconut oil in tanks at New York is now being quoted nominally at 4¾ cents a pound, as compared to the price of a month ago of 3½ cents a pound. The price of copra in bulk on the Pacific Coast is $2.75 per 100 pounds, a considerably higher price than a month ago or a year ago. Sellers of coconut oil on the west coast are not anxious to move the material due to the lack of replacements. Along with the increases in coconut oil prices, babassu oil was also advanced 1 cent to the present nominal quotation of 7½ cents a pound.

Offerings of palm oil are likewise light, and during the month quotations were advanced sharply to 4 cents a pound for the Sumatra material in tanks at New York. Other vegetable oils figuring in the general price rise were soybean oil which was advanced to a level of 6½ to 6⅜ cents a pound, olive foots which was advanced to a level of 11½ to 12 cents a pound, corn oil, cottonseed oil, linseed oil and certain vegetable oil fatty acids. Demand for denatured olive oil also improved with supplies light and diminishing. Recent sales were reported at $2.35 to $2.40 a gallon. As a result of difficulties of obtaining shipments from the Mediterranean area, imports of olive oil totaled only one million pounds in January compared with average imports of about seven million pounds monthly during 1940.

Essential Oils

The price trend in the market for essential oils continued upward during the month with oils from the Far Eastern region becoming increasingly difficult to obtain. Shipments of oils from the Dutch East Indies and other Far Eastern areas became more and more uncertain, occasioning higher prices on anise, cassia, vetiver, cananga, citronella, ylang ylang and other oils from that area. In addition prices were advanced on sweet almond, bergamot, cade, eucalyptus, lavender spike, Italian lemon, lemongrass, origanum, patchouli, pineneedle and rosemary. Exceptions to the general price trend were bay, nutmeg and peppermint.

Insecticide Materials

One large seller of red squill reduced his price to 80 cents a pound this month as new shipments of the material reached the United States.

RAW MATERIAL PRICES

(As of March 25, 1941)

Minimum Prices are for car lots and large quantities. Price range represents variation in quotations from different suppliers and for varying quantities.

Chemicals

Acetone, C. P., drums	lb.	$ .07½	$ .08
Acid, Boric, bbls. 99½%	ton	96.00	128.00
Cresylic, drums	gal.	.68	.70
Low boiling grade	gal.	.68	.70
Muriatic, C. P., carboys	lb.	.08	—
Oxalic, bbls.	lb.	.10¾	.12
Adeps Lanae, hydrous, drums	lb.	.24½	.25
Anhydrous, drums	lb.	.26½	.27
Alcohol, Ethyl, U.S.P., bbls.	gal.	6.00½	6.07
Complete Denat., SD 1, dms., ex.	gal.	.30½	.35½
Alum. Potash lump, bbls.	lb.	.04	—
Ammonia Water, 26°, drums	lb.	.02¼	.02½
Ammonium Carbonate, tech., bbls.	lb.	.08	—
Bentonite, 1, works, 325 mesh	ton	16.00	—
Bentonite, 2, works, 200 mesh	ton	11.00	—
Bleaching Powder, drums	100 lb.	2.00	3.35
Borax, pd., cryst., bbls., kegs	ton	58.00	74.00
Carbon Tetrachloride, car lots	gal.	.66½	1.10
L. C. L.	gal.	.73	1.20
Caustic, see Soda Caustic, Potash Caustic			
China Clay, filler	ton	10.00	16.00
Cresol, U.S.P., drums	lb.	.09¾	.10¼
Creosote Oil	gal.	.13½	.14½
Feldspar, works (200 to 325 mesh)	ton	32.00	35.00
Formaldehyde, bbls.	lb.	.05½	.06
Fullers Earth	ton	15.00	—
Glycerine, C.P., drums	lb.	.12½	.13
Dynamite, drums	lb.	—	Nom.
Saponification, drums	lb.	.08½	.08¾
Soap, lye, drums	lb.	.07⅞	.07⅞
Hexalin, drums	lb.	.30	—
Lanolin, see Adeps Lanae.			
Lime, live, bbls.	ton	6.25	13.00
Mercury Bichloride, kegs	lb.	2.24	2.39
Naphthalene, ref. flakes, bbls.	lb.	.07	.07¼
Nitrobenzene (Mirbane) drums	lb.	.08	.09
Paradichlorbenzene, drums	lb.	.11	.13½
Petrolatum, bbls. (as to color)	lb.	.02¾	.07½
Phenol (Carbolic Acid), drums	lb.	.13	.14¾
Pine Oils, bbls.	gal.	.50	.59
Potash, Caustic, solid	lb.	.06¼	.06¾
Flake, 88-92%	lb.	.07	—
Liquid, 45% basis	lb.	.02⅞	.03¾
Potassium Carbonate, solid	lb.	.06½	.06¾
Liquid	lb.	.02¾	.03⅛
Pumice Stone, powder	100 lb.	No Prices	
Rosins (net wt., ex yard, New York)—			
Grade D to H	100 lb.	2.45	2.45
Grade I to N	100 lb.	2.45	2.74
Grade WG to X	100 lb.	3.21	3.41
Wood, ex. dock	100 lb.	1.54	1.90
Rotten Stone, pwd., bbls.	lb.	—	—
Silica	ton	20.00	27.00
Soap, Mottled	lb.	.04⅛	.04½
Olive Castile, bars	lb.	.28	.38
Olive Castile, powder	lb.	.33	.40
Powdered White, Neutral	lb.	.18½	.20
Olive Oil Foot, bars, 68-70%	lb.	.09	—
Green, U.S.P.	lb.	.08	.09
Tallow Chips, 88%	lb.	.06⅛	.06¾
Soda Ash, cont., wks., bags, bbls.	100 lb.	1.10	1.35
Carlots, in bulk	100 lb.	.90	.95
Soda Caustic, cont., wks., solid	100 lb.	2.30	—
Flake	100 lb.	2.70	2.95
Liquid, tanks, 47-49%	100 lb.	1.95	—
Soda Sal., bbls.	100 lb.	1.10	1.30
Sodium Chloride (Salt)	ton	15.00	15.60
Sodium Fluoride, bbls.	lb.	.07	.08¼
Sodium Hydrosulfite, bbls.	lb.	.16	.17
Sodium Metasilicate, ground	100 lb.	3.75	4.80
Crystalline	100 lb.	2.35	3.35
Sodium Pyrophosphate	100 lb.	5.10	5.60
Sodium Silicate, 40 deg., drum	100 lb	.80	1.20
Drums, 52 deg. wks.	100 lb	1.40	1.80
Tar Acid Oils, 15-25%	gal.	.22	.27
Triethanolamine	lb.	.19	.20
Trisodium Phosphate, bags, bbls.	100 lb.	2.35	3.05
Zinc Oxide, lead free	lb.	.06½	.07

Oils — Fats — Greases

Babassu, tanks, futures	lb.	.07½	Nom.
Castor, No. 1, bbls.	lb.	—	.10¾
No. 3, bbls.	lb.	—	.10¼
Coconut (without excise tax)			
Manila, tanks, N. Y.	lb.	.04¾	Nom.
Tanks, Pacific Coast, futures	lb.	.04¼	Nom.
Copra, bulk, coast	lb.	.0275	—
Corn, tanks, West	lb.	.07	—
Cottonseed, crude, tanks, mill	lb.	.06¾	.07
PSY, futures	lb.	.07⅞	.08⅛
Fatty Acids—			
Corn Oil, tanks, Chicago	lb.	.08½	.08¾
Coconut Oil, tanks, Twitchell, Chi.	lb.	.09½	.09¾
Cotton Oil, tanks, Chicago	lb.	.07¼	.07½
Settled soap stock, Chicago	lb.	.02½	.02¾
Boiled soap stock, 65%, Chi.	lb.	.03½	.03¾
Foots, 50%, Chicago	lb.	.01⅜	.01½
Red Oil, bbls., dist. or sapon., Chi.	lb.	.07¾	.08⅝
Tanks	lb.	.07¼	—
Stearic Acid, saponif.			
Double pressed	lb.	.11¼	.12¼
Triple pressed	lb.	.14	.15
Greases, choice white, tanks	lb.	.06¼	—
Yellow	lb.	.05¾	.05⅞
Lard, city, tubs	lb.	.07⅞	—
Linseed, raw, bbls.	lb.	.0990	.1050
Tanks, raw	lb.	.0920	.0940
Olive, denatured, bbls., N. Y.	gal.	2.40	Nom.
Foots, bbls., N. Y.	lb.	.11½	.12
Palm, Sumatra, cif. New York, tanks	lb.	.04	—
Palm, kernel, shipment	lb.	No Prices	
Soya Bean, domestic, tanks, crude	lb.	.06½	.06⅝
Stearin, oleo, bbls.	lb.	.07	.07½
Tallow, special, f.o.b. plant	lb.	.06	—
City, ex. loose, f.o.b. plant	lb.	.06⅛	—
Teaseed Oil, crude	lb.	.17½	Nom.
Whale, refined	lb.	.0910	—

(As of March 25, 1941)

Essential Oils

Almond, Bitter, U.S.P.	lb.	$3.00	$3.25
Bitter, F.F.P.A.	lb.	3.15	3.50
Sweet, cans	lb.	1.30	1.35
Anise, cans, U.S.P.	lb.	.95	1.00
Bay, 55-60% phenols, cans	lb.	1.00	1.10
Bergamot, coppers	lb.	14.50	Nom.
Artificial	lb.	3.75	5.00
Birch Tar, rect., cans	lb.	1.25	1.30
Crude, cans	lb.	.48	.50
Bois de Rose, Brazilian	lb.	2.00	2.15
Cayenne	lb.	—	—
Cade, cans	lb.	.45	.55
Cajeput, native, cans	lb.	.65	.70
Calamus, cans	lb.	8.25	8.50
Camphor, Sassy, drums	lb.	.22	.24½
White, drums	lb.	.22	.23
Cananga, native, cans	lb.	4.50	5.00
Rectified, cans	lb.	5.00	5.50
Caraway Seed	lb.	7.75	Nom.
Cassia, Redistilled, U.S.P.	lb.	1.90	2.25
Cedar Leaf, cans	lb.	.90	.95
Cedar Wood, light, drums	lb.	.25	.26
Citronella, Java, drums	lb.	.38	.40
Citronella, Ceylon, drums	lb.	.41	.45
Clove, U.S.P., cans	lb.	1.15	1.20
Eucalyptus, Austl., U.S.P., cans	lb.	.68	.70
Fennel, U.S.P., cans	lb.	2.05	2.15
Geranium, African, cans	lb.	12.25	Nom.
Bourbon, cans	lb.	12.00	Nom.
Turkish	lb.	3.00	3.25
Hemlock, tins	lb.	.85	.90
Lavender, 30-32% ester, cans	lb.	5.00	5.25
Spike, Spanish, cans	lb.	2.00	2.45
Lemon, Ital., U.S.P.	lb.	5.25	6.20
Cal.	lb.	3.25	—
Lemongrass, native, cans	lb.	.87	1.35
Linaloe, Mex., cases	lb.	1.75	2.00
Nutmeg, U.S.P., cans	lb.	2.25	2.40
Orange, Sweet, W. Ind., cans	lb.	2.50	2.60
Italian cop	lb.	8.00	Nom.
Distilled	lb.	.90	—
California, expressed	lb.	2.25	—
Origanum, cans, tech.	lb.	1.50	1.55
Patchouli	lb.	5.00	5.50
Pennyroyal, dom.	lb.	3.00	Nom.
Imported	lb.	2.25	2.50
Peppermint, nat., cans	lb.	3.40	3.65
Redis., U.S.P., cans	lb.	3.60	3.90
Petitgrain, S. A., cans	lb.	1.40	1.65
Pine Needle, Siberian	lb.	1.35	—
Rosemary, Spanish, cans	lb.	.85	.90
drums	lb.	.77	.80
Sandalwood, E. Ind., U.S.P.	lb.	4.95	5.25
Sassafras, U.S.P.	lb.	1.00	1.25
Artificial, drums	lb.	.70	.78
Spearmint, U.S.P.	lb.	2.75	3.00
Thyme, red, U.S.P.	lb.	.80	1.75
White, U.S.P.	lb.	.95	1.95
Vetiver, Bourbon	lb.	5.50	9.50
Ylang Ylang, Bourbon	lb.	7.00	Nom.

Aromatic Chemicals

Acetophenone, C. P.	lb.	$1.60	—
Amyl Cinnamic Aldehyde	lb.	1.70	$2.00
Anethol	lb.	1.10	1.15
Benzaldehyde, tech.	lb.	.45	.50
U.S.P.	lb.	.85	.95
Benzyl, Acetate	lb.	.44	.49
Alcohol	lb.	.63	.68
Citral	lb.	1.40	3.10
Citronellal	lb.	.75	.80
Citronellol	lb.	1.60	1.85
Citronellyl Acetate	lb.	4.00	7.00
Coumarin	lb.	2.75	3.00
Cymene, drums	gal.	.90	1.25
Diphenyl oxide	lb.	.50	.55
Eucalyptol, U.S.P.	lb.	.80	.85
Eugenol, U.S.P.	lb.	1.75	2.00
Geraniol, Domestic	lb.	.60	3.00
Imported	lb.	2.00	3.00
Geranyl Acetate	lb.	1.20	2.50
Heliotropin	lb.	3.00	3.20
Hydroxycitronellal	lb.	2.00	2.50
Indol, C. P.	lb.	32.00	34.00
Ionone	lb.	2.75	3.95
Isoborneol	lb.	.90	1.07
Iso-bornyl acetate	lb.	.80	.95
Iso-Eugenol	lb.	2.80	4.25
Linolool	lb.	2.75	3.30
Linalyl Acetate	lb.	3.20	4.25
Menthol	lb.	3.65	4.10
Methyl Acetophenone	lb.	2.50	3.00
Anthranilate	lb.	2.20	2.30
Paracresol	lb.	4.50	6.00
Salicylate, U.S.P.	lb.	.35	.37
Musk Ambrette	lb.	3.65	3.95
Ketone	lb.	3.70	4.10
Xylol	lb.	1.05	1.20
Phenylacetaldehyde	lb.	2.10	2.50
Phenylacetic Acid	lb.	1.75	3.00
Phenylethyl Alcohol	lb.	2.30	3.35
Rhodinol	lb.	5.50	10.90
Safrol	lb.	.85	.90
Terpineol, C. P., drs.	lb.	.25	—
Cans	lb.	.28	—
Terpinyl Acetate, 25 lb. cans	lb.	.82	.85
Thymol, U.S.P.	lb.	1.55	1.60
Vanillin, U.S.P.	lb.	2.50	2.75
Yara Yara	lb.	1.25	1.55

Insecticide Materials

Insect Powder, bbls.	lb.	.23	.26
Pyrethrum Extract			
5 to 1	gal.	1.20	1.25
20 to 1	gal.	4.70	4.85
30 to 1	gal.	7.00	7.25
Derris, powder—4%	lb.	.18	.20
Derris, powder—5%	lb.	.21	.23
Cube, powder—4%	lb.	.16	.19
Cube, powder—5%	lb.	.19	.22
Squill, red, dried	lb.	.80	1.25
Phosphorus paste	lb.	.25	.62½

Waxes

Bees, white	lb.	.38	.40
African, bgs.	lb.	.30	Nom.
Refined, yel.	lb.	.35	.36
Candelilla, bgs.	lb.	.20¾	.21½
Carnauba, No. 1, yellow	lb.	.68	.70
No. 2, N. C.	lb.	.64	.65
No. 3, Chalky	lb.	.57	.59
Ceresin, yellow	lb.	.11	.14½
Montan Wax	lb.	No Prices	
Paraffin, ref., 125-130	lb.	.0570	—

PRODUCTION SECTION

A section of SOAP devoted to the technology of oils, fats, and soaps published prior to Jan. 1, 1932, as a separate magazine under the title, Oil & Fat Industries.

Fatty Acid Sources

THE soap manufacturer knows that the sodium salt of lauric acid is the desired rapid-lathering constituent of his soap product. Coconut oil has been for many years and still is the most readily available economic source of this fatty acid. However, the supply must be imported and is subject not only to possible interruption in time of international conflict, but also to political regulation in peace time.

Although there is no natural domestic substitute for coconut oil, by cooperation between the domestic soap and petroleum industries, synthetic coconut oil fatty acids have been developed that compare favorably with the natural products. These have not replaced coconut oil in the soap industry because they cannot compete at normal price levels. However, they put a ceiling on the price of coconut oil, and can be made at any time that conditions warrant it.

An outstanding source of fatty acids which has been developed in the past decade is the pulp and paper industry. These fatty acids, variously known as tall oil and liquid rosin, are of growing importance. Their properties compare favorably with those of more costly raw materials. The principal uses so far have been in low-cost and specialty soaps. Metal cleaners and polishes have also been made from tall oil. The refined oil is recommended for uses similar to those of red oil or oleic acid. Although the total production is small at present, it is abundant in prospect. Large-scale use is expected as soon as efficient methods for fractionating the component acids are developed. With a content of 25-30 per cent of abietic acid, tall oil should prove a popular raw material in the manufacture of yellow laundry soap. Since it comes from waste liquor in the sulfate process for producing wood pulp, the base raw material cost is low. At least six companies are known to be producing tall oil in the United States.

New continuous processes by which fats and oils may be split into their constituent fatty acids insure products of uniform quality, and usually of better quality than can be obtained by the ordinary batch methods. The fact that higher concentrations of glycerine are obtained adds to the commercial attractiveness of the new processes. Gordon W. McBride. *Chem. & Met. Engineering* **47,** 830-3 (1940).

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Short Washing Formula

A modified short washing formula uses the break as an important suds operation. The break is conducted with a 4-inch water level at a temperature of 125-35°F., with a period of 10 minutes. A wetting out agent is added immediately after filling the wheel, and is run for about 2 minutes. Then all of the alkali to be used in the formula is added, followed by neutral soap solution to give a good running suds.

This break operation is followed by an 8-minutes suds at 150-60°F. with only neutral soap solution added. Next is the combined bleach and suds at 145-50°F. and a time of 8 minutes, with neutral soap solution and bleach added. This is followed by four 3-minutes rinses, the first two at 150-60°F., the next at 135-45°F., and the last at 100-10°F. The final operation, requiring 5 minutes, is the sour and bluing. The whole procedure is completed in a running time of 43 minutes.

Since all the alkali is added in the break, the rinsing of alkali from work really begins with the first suds; for this reason the four rinses are adequate. The alkali should give a pH of 11.1-11.2 at the end of the break operation. As alkali, sodium metasilicate, sodium sesquisilicate, and sodium orthosilicate, have all been used with good results. For the short formula to be successful, soft water must be used and equipment must be in good condition, with facilities for proper temperature control. Kits should be on hand for the determination of pH. The whole process is designed for

careful control of these factors. C. H. Bayley. *Laundry & Dry Cleaning J.* of Canada **21,** Feb., 16-17 (1941).

Oil Extraction

In a special apparatus oil-bearing materials such as oil seeds are simultaneously cut up and extracted with a solvent. The cutting and maceration of the seeds takes place in several steps, each making the material more finely divided. The extract of oil can be drawn off between these steps by means of intermediate presses. German Patent No. 682,912; through *Fette und Seifen* **47,** 464-5 (1940).

Sulfonated Oil

A mixture of castor oil or castor oil fatty acids with terpene alcohols is sulfonated by means of concentrated or fuming sulfuric acid or chlorosulfonic acid. T. Tanaka. Japanese Patent No. 129,042.

Fur Cleaning Methods

Methods and materials vary somewhat in fur cleaning according to the kind being cleaned, but for straight fur the general procedure for a fur easy to clean is as follows: Sponge the lining carefully with a dry-cleaning solvent. The coat is turned wrong side out for this. After sponging, the coat is turned right side out and the fur brushed with soda solution with the lay of the fur. The coat is then placed in the drum with sawdust or with walnut shell-meal—the latter being particularly suitable for curly furs—and run for 20-30 minutes. The lining is ripped open at the bottom and at the sleeves, and all surplus sawdust shaken out. The fur is then placed in the cage or shaker side of the drum for 30-40 minutes. This is usually sufficient time to clean the coat of dust and surplus sawdust.

Any long haired fur should be combed carefully and brushed with a wire brush. It is then glazed with a slippery-elm solution, known to the furrier as "wood bark." This is best prepared by using 1/3 ounce of the bark to 1 gallon of cold water. Let stand for 24 hours, stir, squeeze out, and strain before using. Apply to the fur with a glazing brush and let remain over night or until dry. Break up with a glazing stick, comb out, brush, beat and blow with air. The more fluffing and beating done, the better the fur will look. Use the wood knife and the glazing stick to smooth the fur down. Practically any long-haired fur can be treated this way and improved a hundred per cent.

Mink and skunk are treated in this way, the fur being brushed backwards and just enough glazing fluid applied against the fur to moisten the tips of the guard hair. The fur is allowed to dry in this position, then the same process carried out as described. The rather tender skins of mink have to be treated with care.

With black and brown Persian lamb, the best method of restoring the original oil is to use 2 ounces of lanolin to 1 gallon of solvent. Spray this solution on the fur and let dry. If it is not glossy enough, re-spray it. Dyed furs are carefully tested with any solution to be used on them to see whether the dye comes out, trying this on a small spot first.

White ermine collars and cuffs, white lapin, coney, fox and the like should be bleached one or more times with equal parts of hydrogen peroxide and water, allowed to dry, brushed and combed with the wood knife, and blown. To produce sheen, rub the fur with tissue paper. White corn meal is used in place of sawdust for cleaning expensive white furs. To 1 peck of meal add 1 quart of solvent such as carbon tetrachloride or perchloroethylene. To this add about 2 ounces of mineral oil as lubricant.

Curly furs are beaten on the skin side, never on the fur side and never blown with air or steam, as this is apt to destroy the natural formation of the curl. With silver fox, clear water is used in place of slippery elm as a glaze. Z. L. King. *Laundry & Dry Cleaning J.* of Canada **21,** Feb. 20-2, 29 (1941).

Coconut Oil

Coconut oil, obtained in 65.7 per cent yield by extraction of the dried kernels of coconuts from Hainam Island, South China, with ether, had the characteristics: Acid value 1.1, Wijs iodine value 8.7, melting point 24.2° C., saponification value 261, unsaponifiable matter 0.4 per cent, and solidifying point 22° C. By fractionation of the methyl esters and by use of the thiocyanogen method for unsaturation, the acids present were found to be: Caprylic 8.73, capric 8.05, lauric 51.34, myristic 13.06, palmitic 7.46, stearic 2.03, oleic 5.46 and linoleic 2.31. H. Nobori. J. Soc. Chem. Ind., Japan 43, Suppl. binding 199-200 (1940).

Refining Fish Oil

Fish oil is treated with alkali carbonate and bittern and the resulting emulsion allowed to stand for about 24 hours. It is then broken up by the addition of manganese salts, the clear oil being taken from the top. T. Nemoto. Japanese Patent No. 129,041.

Resin Water Softeners

A supply of water of reduced hardness chemical content is a necessity in a large number of industries, so that the utilization of ion-exchange mechanisms is making great progress. Resin exchange bodies have been produced which are chemically very reactive. Their fundamental character as high molecular-weight acids or bases is carefully maintained during manufacture and is usually accentuated by the inclusion of special exchange-active groups. The structure of these resins is that of gels, and in consequence of their large internal surface the reaction capacity is intensified.

Complete removal of all salts from water is made possible by a 2-stage process. With two resin types, it is possible by a single filtration, first over a cation-, then over an anion-exchanger, to remove 97 per cent of the salts from water of average hardness. G. S. Ranshaw. *Chem. Age* **44,** 95-7 (1941).

Refining Crude Oils

THE majority of crude oils and fats contain besides free fatty acids, lipoids, phenolic compounds, mucilaginous matter, coloring substances, albuminoids, and other impurities, mostly in a finely dispersed form. Up to quite recently, deacidification by treatment with alkali has been looked upon as the only suitable method, since lye treatment eliminates practically all impurities except certain odor carriers such as aldehydes, ketones, etc.

However, the conventional method of deacidification by alkali as employed by most of the industry is extremely wasteful. In the treatment of some oils with an especially high free fatty acid content, such as herring oil, sardine oil and rice bran oil, it is impossible to carry out the refining process on an economical basis, although a very satisfactory result is produced from the point of view of quality of the product. Various modifications which have been introduced in alkali neutralization do not appear to have had any considerable effect on the refining factor. Continuous neutralization in conjunction with centrifugal separation of the soap stock from the neutral glycerides, reduces the losses to a more rational level, but has its limitations and cannot be applied to coconut, palm kernel, castor oil, and to hardened fats. The refining factor of liquid whale oil is not lowered appreciably by this method as compared with the conventional method.

The Bamag-Veckers process, followed by a lye wash, appears to be a very good solution for concerns with a large output. In this method, which is continuous, several filtering steps are followed by a heat treatment at 200-280°C., in turn followed by high vacuum distillation. Advantages are universal applicability, removal of free fatty acids, not as soap, but as distilled fatty acids of good appearance, simultaneous deodorization with fatty acid distillation, no decomposition by heat, practically a 100 per cent yield, and favorable cost compared with alkali refining. L. H. Manderstam. *Oil and Colour Trades J.* **98,** 795-802 (1940).

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Tetrasodium Pyrophosphate

Tetrasodium pyrophosphate, $Na_4P_2O_7$, is 98-99.5 per cent pure in the commercial form. Its pH value in useful concentrations in solution is close to that of neutral soap, as shown in the table.

Commonly Used Chemicals	*pH of 1% Solutions*
Caustic soda	13.3
Sodium metasilicate	12.4
Trisodium phosphate, crystalline	12.1
Soda ash	11.5
Tetrasodium pyrophosphate	10.2
Borax	9.0
Disodium phosphate, crystalline	8.9
Sodium bicarbonate	8.3
Monosodium phosphate, anhydrous	4.6
Sodium acid pyrophosphate	4.2

The water softening power of tetrasodium pyrophosphate makes it extremely useful in a number of processes in textile cleaning, dyeing and finishing. Another valuable property is its ability to solubilize iron salts. Complex sodium iron pyrophosphates are formed which are much more soluble than the simple ferrous or ferric pyrophosphates. Paul Logue. *Am. Dyestuff Reporter* **30,** P39-43 (1941).

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Melting Range of Fats

Natural fats, being complex mixtures of glycerides, have no sharp melting points, but various methods are available for estimating the temperatures at which definite degrees of melting occur. Notable discrepancies frequently occur between the results of observers using the capillary tube method. A photoelectric method was developed for determining melting points by which the present lack of consistency between the results of different observers using the capillary tube method, may be avoided.

The fact that melting starts at a temperature below the visual melting point is confirmed by a modification of the dilatometric method, which leads to reproducible and definite results for the true incipient and complete melting points.

The possible use of figures for change in volume on melting and for the rate of change of density with temperature during melting is suggested as a means of characterizing fats. K. A. Williams. *Analyst* **66,** 3-9 (1941).

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German Glycerine Situation

In peace time, nearly all of Germany's glycerine is produced as a by-product of the saponification of fat by the soap industry. National production in recent peace years has had an approximate annual average of 12,000 metric tons. Supply from this source has been drastically reduced from the outbreak of war, owing to sharply lessened imports of vegetable oilseeds, which constitute the normal main source of fatty raw material required by the soap industry. Most of the fatty-acid requirements of Germany's greatly lessened production of soap during war time is supplied synthetically from paraffin, derived as a by-product from domestic lignite during the synthesis of motor fuel by the Fischer-Tropsch process.

Also, apart from the fermentation of sugar, Germany is doubtless able to obtain glycerine synthetically from other raw materials, notably propylene, from which chemically pure glycerine can be produced by chlorination. Prophylene is available in coal gas, which is abundantly procurable from Germany's extensive coal-mining industry. Germany's glycerine situation during the present war is claimed to have been made easier than during the last war, owing to improvements achieved in the manufacture of glycerine substitutes. *Chemical Age* **43,** 220 (1940).

Determination of Water

Many oils do not part readily with the last traces of the water they contain, and the drastic process of removal required to get the last fraction of a per cent of water is often sufficient to volatilize some of the oil. In addition there is always the possibility of an increase in weight due to oxidation. Low-pressure removal may be very slow. The following method, if carried out carefully gives excellent results, and is simple and rapid.

About 5 grams of the oil are weighed into a tared test tube which is then stoppered. The oil is heated very gently, keeping the top half of the tube cool so that any water vapor condenses on the sides just under the stopper. A minute trace of water produces a visible film and more than 0.5 per cent gives droplets which run back into the hot oil with a characteristic crackle. The stopper is removed, the tube held at the base in a cloth, and the portion on which water has condensed is passed quickly through a flame a few times to remove the water. The tube is again stoppered, allowed to cool, and weighed. The process is repeated until no film of moisture appears, when no further loss in weight will be obtained. The method should check to 1 mg. between duplicate determinations. Most vegetable oils behave satisfactorily although certain fish oils tend to distil and have to be treated more slowly and at lower temperatures. J. Grant. *Chemist Analyst* **29,** 79-80 (1940).

Foam Baths

Products to evolve carbon dioxide and thus provide effervescent baths are made with aminosulfonic acid, NH_2SO_3H, as the acid component. This is mixed in solid form with carbonates or bicarbonates and sold as a powder or compressed into tablets. The mixture is not hygroscopic. Aminosulfonic acid is especially suitable because it forms water-soluble salts with the hardening agents present in water. As an example, 92 parts by weight of sodium bicarbonate are mixed with 87.8 parts by weight of solid aminosulfonic acid and 22 parts of fatty alcohol sulfate. The mixture is perfumed with a composition yielding a fir needle aroma, and is then compressed into tablets. Henkel & Cie. G.m.b.H. British Patent No. 527,041.

Removing Leather Spots

For the treatment of water spots on leather, especially on white gloves, a mixture of 1 part of soda ash to 3 parts of methanol is recommended, applied with a brush.

Bleaching Fats

The bleaching and purification of fats are effected by means of a solution or emulsion containing a per compound and a product containing an albuminous substance such as soybean, to which a small quantity of accelerators for oxygen liberation such as alkaline earth hydroxides or finely divided iron has been added. The purification process is improved by the addition of compounds capable of precipitating albumin, such as tannin, tannic acid and especially sodium chloride. Robert Mahler. French Patent No. 845,020.

Fatty Acid Separation

High- and low-titer components of mixed fatty acids can be separated by means of one crystallization with an accuracy to 5 per cent, and to within 0.5 per cent with one recrystallization of the high-titer fraction. The method separates the following:

High-titer Fraction

1. Saturated fatty acids from C_{12} to C_{20}
2. Waxy acids from degras
3. Elaidic acid

Low-titer Fraction

1. Oleic acid
2. Linoleic acid
3. Linolenic acid
4. Rosin acids, abietic
5. Naphthenic acids
6. Dichlorostearic acid
7. Phenylstearic acid

The acids are dissolved in petroleum ether and filtered from any matter insoluble at room temperature. The filtrate is cooled to —45° to —50° C. by chilling the flask in acetone to which dry ice has been added. The separated crystals consisting of high-titer components are isolated by filtration in a special funnel cooled to —50° C. The method takes about an hour, the fractions being weighed after evaporation of solvent. Fats themselves can be fractionated by this method. R. J. DeGray and A. W. Demoise. *Ind. Eng. Chem.*, Anal. Ed. **13,** 22-4 (1941).

Conductivity of Soaps

The conductivity of 0.1-0.4 Normal solutions of sodium oleate was measured in the presence of different amounts of the three isomeric cresols at 20-60° C., in order to determine the relationship existing between conductivity, degree of dispersion, and the solvation of lyophilic colloids. Investigation of the conductivity of sodium oleate solutions in the presence of cresol permits study of a system in which changes in the degree of dispersion are of minimal significance, while water attraction or solvation plays the chief role.

A great difference was observed between the conductivity of sodium oleate and sodium stearate solutions. Although the cation is the same and the anion differs only by two hydrogen atoms, in the oleate solution conductivities were observed 5-10 times higher than in equivalent solutions of sodium stearate, a result which must be due to a different state or degree of dispersion.

In the presence of cresol, sodium oleate in concentrated solutions and at the lower temperatures decreases in conductivity with the addition of cresol, passes through a minimum value and then increases to a more or less marked maximum. The minimum in the curves is the more marked, the lower the temperature; with an increase in temperature the minimum flattens out and disappears at high temperatures. *Para*-cresol gives the most decided minima, then *meta*-, then *ortho*-. With an increase in temperature and decrease in soap concentration these differences become less noticeable and almost disappear in 0.1 Normal soap solutions. E. Angelescu and A. Woinarosky. *Kolloid-Z.* **93,** 199-207 (1940).

PRODUCTS AND PROCESSES

Abrasive Detergent

An abrasive detergent composition contains sodium hexametaphosphate capable of sequestering calcium in a slightly ionized condition, and an inorganic abrasive which is insoluble in water but soluble in aqueous solutions of the alkali-metal salt. Examples of the abrasive are dicalcium phosphate, tricalcium phosphate, calcium carbonate, magnesia, calcium metaphosphate, and magnesium metaphosphate. Hall Laboratories, Inc. Canadian Patent No. 394,817.

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Filled Cake Soap

A solid soap to contain about 4 per cent of soap is made by dissolving 7-8 parts of curd soap (sodium stearate) in 50 parts of hot water, adding 5 parts of sodium metasilicate, and working the solution up with 10 parts of colloidal clay and about 30 parts of powdered pumice. The powdered mixture must be ground very fine to give a cake product. *Seifensieder-Ztg.* **67,** 548 (1940).

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Cleaning Before Plating

Before protective coatings can be applied successfully to metal, it is necessary to prepare the surface properly, exceptional care being required in the preparation of metal surfaces for electroplating. During the cleaning process, grease and the solid particles which are held by the grease are removed. Best results are obtained when 95 per cent or more of these undesirable substances are removed by an organic solvent such as trichloroethylene, and the remainder by treatment in an aqueous alkaline solution, preferably with the work connected as cathode or anode. This alkaline solution should be a good acid neutralizer, should possess good wetting, saponifying, emulsifying and deflocculating properties,—should be easily removed by rinsing, and should not corrode the surface to be cleaned. Raymond R. Rogers. *Canadian Chemistry & Process Industries* **25,** 7-10 (1941).

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Turkey Red Oil in Soap

Turkey red oil can be added to toilet soap as a superfatting agent, although it will not give the soap the same properties as the usual superfatting agents such as lanolin. The acid Turkey red oil can be used to neutralize excess alkalinity in the soap, or it can be itself neutralized with ammonia or triethanolamine before addition. *Seifensieder-Ztg.* **67,** 494 (1940).

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Ketone Wetting Agents

Products of high wetting power are obtained by introducing at least one of the groups $—SO_3H$ or $—S—SO_3H$ into aliphatic ketones having 11 to 17 carbon atoms in the molecule and containing alkyl groups of at least 5 carbon atoms, such as diheptyl ketone or various mixed ketones. W. Schowalter, H. Haussmann, M. Neber, H. Keppler and R. Schroeter, to General Aniline & Film Corp. U. S. Patent No. 2,218,660.

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Zinc Perfume Fixative

Many perfume fixatives are not suitable for use in soap because of sensitivity to alkali and to light. Zinc white is an inorganic fixative which possesses a number of advantages for incorporation in soap. It serves as a fixative for perfume materials because of the great surface area of its particles, which gives it special adsorptive properties somewhat similar to those of carbon black.

Being neutral or more or less inert it does not change the original odor of the added perfume in any way, but simply adsorbs it, thus preventing volatilization and loss of odor from the soap during storage. It is not affected by alkali, being itself very slightly alkaline in character, sufficiently so to have some neutralizing action on acid decomposition products in the soap. It helps to counteract the harmful effect of light on perfume by adsorbing light waves of short wave length. Zinc white can be used as a supplementary fixative in combination with the usual fixatives of an organic nature which themselves possess odorant properties. A. Foulon. *Deutsche Parfümerie-Z.* **26,** 217-18 (1940).

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Petroleum Detergent

Use is made of a detergent mixture of alkali metal salts of monosulfonated monoaryl alkanes and polyaryl alkanes obtained by halogenating a petroleum fraction (kerosene) distilling at 205-245° C., until a substantial proportion of halogenated hydrocarbons is produced. An aromatic hydrocarbon such as benzene is condensed with the product to obtain an alkylated aromatic hydrocarbon mixture. The unhalogenated kerosene fraction is separated from the alkylated aromatic hydrocarbon mixture. The latter is sulfonated and converted to alkali metal salts. Lucas P. Kyrides, to Monsanto Chemical Co. U. S. Patent No. 2,218,472.

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Abrasive Paste Soap

Cleansing pastes are made by mixing together 7-9 parts of liquid toilet soap, 48-52 parts of potash soft soap, 52-56 parts of pumice powder, and 0.125 parts of oil of lemon grass. L. Goymour and M. D. Goymour. British Patent No. 512,642.

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Sulfonated Esters

Higher fatty-acid esters or higher alcohol-ethers of polyhydric alcohol phosphates or borates are sulfonated by the usual means to give surface-active products. N. V. Chemische Fabriek "Servo" and M. D. Rozenbroek. Dutch Patent No. 48,113.

Nickel in Hardened Fats

Tentative experimental results show that filtered hardened fat contains up to 2-4 per cent of colloidal nickel from the hydrogenation catalyst. About 30 per cent of the colloidal nickel is nickel soap. M. Yakubov. Masloboino Zhirovoe Delo **16,** No. 3, 12-13 (1940); through *Chem. Abs.*

What Soap Content?

(*From Page* 30)

liquid soap has 40 per cent nonvolatile material at 105° C. when dried to constant weight. The anhydrous soap content of a regular 40 per cent coconut oil soap would be approximately 34 per cent,—the balance of the material would be glycerine if the soap were made from coconut oil and not fatty acid. If it is made from fatty acid and were a 40 per cent solid soap, it would then be a 40 per cent anhydrous soap. The definition of anhydrous means without water. However, in the soap industry some concerns consider it as meaning just soap with the glycerine extracted.

Now here is the situation. The large companies who manufacture liquid soap, (I mean by that the big ones) sell a 40 per cent liquid soap. Some of these big outfits remove the glycerine from the soap because the glycerine is worth more than the liquid soap on today's market. Glycerine sells for 13 cents per pound which would be equivalent to about $1.30 per gallon, and naturally these manufacturers take out the glycerine and sell it. This cheapens the liquid soap materially. The soap is not as mild or bland on the skin as soap with glycerine in it. Thus it is obvious why some soaps are 40 per cent anhydrous when they contain no glycerine, because they are made from fatty acids and not from the whole coconut oil.

Our 40 per cent soap is actually 40 per cent total solids. Now if we were to make this liquid soap 40 per cent anhydrous, it would mean that the total solids would be up around 46 per cent and the product would not be liquid. Our soap is right at the point of its heaviest viscosity before it turns solid. We even have trouble every once in a while where a customer leaves off the bung and some of the water evaporates. The soap jells and then we have to write all kinds of letters to our customers telling them how to restore the soap by simply adding water.

We do not believe that we misrepresent in the sale of this soap since we have never represented it to contain 40 per cent *anhydrous* soap, but have been selling it on a 40 per cent solid basis, the same as most other manufacturers sell liquid soaps. Frankly we have seen very few specifications which call for a 40 per cent *anhydrous* liquid soap. As an illustration Western Electric Company, who are one of the largest liquid soap users in the United States, in sending out their specifications for 1940 call for 12.5 per cent and 34.0 per cent anhydrous soap as follows:

	15% *Soap*	40% *Soap*
Total anhydrous soap shall not be less than..	12.5	34.0
Total matter insoluble in alcohol shall not exceed	0.5	1.4
Free alkali, calculated as potassium hydroxide, shall not exceed.....	0.5	0.14
Chlorides, calculated as potassium chloride, shall not exceed.....	0.3	0.8
Unsaponified saponifiable material shall not exceed	.07	.19
More than traces of sugar shall not be present.		

A MANUFACTURER in the West makes the following comment: "Judging from common usage in the trade, the term 'soap solids' to which the percentage figure of a liquid soap refers, means total solids, that is not only the soap and glycerine but also any other added substances such as mineral salts which may be present in the soap. Personally, it is my belief that when we use the term 'soap solids,' it should refer to the anhydrous soap alone and not to the other solids present. However, because the industry does not use this designation of anhydrous soap except on very rare occasions and everything and anything which is present in the soap solution except the water is counted as soap, I guess that manufacturers, including ourselves, are more or less forced to sell their soaps on the same basis. We all know that when 'soap solids' means everything except the water, that it opens the door for all kinds of substitution, that is, the addition of cheaper materials other than pure soap to build up the solids. Of course, if the industry generally decided to adopt a selling basis of anhydrous soap or of the soap plus glycerine, we would be willing to do the same thing."

FROM the foregoing opinions and from a wide discussion of this question in the trade, there seems to be only one conclusion, and that is that no standard practice for designating the percentage of a liquid soap exists. It may be judged that although some manufacturers believe that liquid soaps should be sold on a basis of either (1) anhydrous soap, or (2) anhydrous soap plus glycerine, more of them are selling on a basis of "total solids" than on any other basis. They apparently believe that they must do this because their competitors are doing it, although in discussion with them, they admit that the "total solids" method permits of the addition of numerous undesirable materials which are counted as soap, and in reality might be considered as misrepresentation if the basis of the "total solids" figure is not explained fully to buyers. Of course, the entire argument may be narrowed down into the hair-splitting range. Nevertheless, in the trade there is much strong feeling that the basis of sale for liquid soaps should be standardized, and that the method which makes it look like the buyer is getting the most for his money should not be used for that reason alone.

With all sides of this argument in mind, the subject will be left open for further discussion here. Just how can some sort of standard practice be decided upon and how best established on a workable basis in the trade? Further opinions on the subject will be welcomed.

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No. 2,230,995, Larvicide and Insecticide, patented February 11, 1941 by Narayan Annappa Balvalli, Bombay, British India, assignor of one-half to F. S. Kerr & Company, Bombay, British India. The method of preparing a pest-control composition useful as a larvicide and insecticide, which comprises subjecting base material containing cashew nut shell liquid which includes anacardic acid to the action of a chemical compound adapted to form a salt of the anacardic acid and which is capable of taking the salt thus formed into solution, separating out the residual compound containing the toxic principle by means of a solvent which is immiscible with the solvent holding the anacardic salt, evaporating at least partially the said solvent from the toxic compound, and then admixing the said toxic compound with a liquid hydrocarbon vehicle medium in a quantity which will prevent oxidation of the toxic principle by the air and thereby prevent loss of toxicity of the same.

No. 2,231,423, Spray for Vegetation, patented February 11, 1941 by Franz A. Horsley, Wilmington, and Ludwig Rosenstein, San Francisco, Calif., assignors to Shell Development Company, San Francisco, Calif. An ammonium polysulfide solution suitable for use as an insecticide on dilution with water comprising ammonium sulfide containing divalent sulfur from .1 to 3 per cent of free ammonia and additional sulfur as polysulfide sulfur, the ratio of the polysulfide sulfur to the divalent sulfur of the ammonium sulfide being from about 2.2:1 to 2.5:1, the said amount of free ammonia being sufficient to prevent the precipitation of sulfur for at least 20 minutes when the solution is diluted with water to a polysulfide sulfur content of about .31 per cent.

Fractionating Fatty Acids

Mixed fatty acids such as those produced by the hydrolysis of animal, vegetable or marine oils are fractionated in a bubble plate distillation column formed of a corrosion resistant steel alloy containing 18 per cent of chromium, 8 of nickel and 2-4 of molybdenum. Ralph H. Potts and John E. McKee, to Armour and Co. U. S. Patent No. 2,212,127.

Quaternary Compound

Alpha-chloro-4-(*para*-chlorophenoxy) acetanilide is caused to react with dimethyl amine and the *alpha*-dimethylamino-4-(*para*-chlorophenoxy) acetanilide which is obtained is converted by benzyl chloride into the quaternary compound, a white powder easily soluble in water. J. R. Geigy A.-G. Swiss Patent No. 206,896.

Soap Fat Consumption Gains

(*from Page* 34)

been steadily increasing for the past three years, was used to the amount of 41,221,000 lbs., an increase of almost 10 per cent over the preceding year.

A relatively small amount of marine animal oils was used in the manufacture of soap, the 1940 figure being only 19,250,000 lbs. as compared with 51,522,000 lbs. in 1939, and over 66 million lbs. in 1938. Consumption of soybean oil, however, increased impressively, 17,612,000 lbs. going into soap in 1940, an increase of 52 per cent over 1939. The use of soybean oil as a soap stock has been increasing every year for the past seven years. Less olive foots or sulfur oil was used in 1940, the consumption amounting to 14,948,000 lbs. as compared to the total 1939 consumption by the soap industry of more than 19,000,000 lbs. Somewhat more inedible olive oil, however, was used, the 1940 consumption being 1,637,000 lbs. as compared with the 1,439,000 lbs. used in 1939.

Corn oil to the amount of 3,638,000 lbs. found its way into the soap kettle in 1940, 18 per cent less than was used the preceding year. This decrease was more than offset by the higher consumption of cottonseed oil which amounted to 2,971,000 lbs., or an increase of 118 per cent over 1939. Castor oil also became more important as a soap stock, its consumption by the soap industry being about 30 per cent higher than the abnormally low figure for 1939. Palm-kernel oil, on the other hand, practically dropped out of the picture in 1940, its use dropping to only 197,000 lbs. last year, as compared with 3,657,000 lbs. in 1939, and 29,498,000 lbs. in 1938. The use of linseed oil decreased slightly, the 1940 consumption being 1,489,000 lbs. as compared with the 1939 consumption of 1,780,000 lbs.

Other soap stocks tabulated by the Bureau of the Census were used in the following amounts: edible tallow, 657,000 lbs.; lard, 645,000 lbs.; edible animal stearin, 549,000 lbs.; peanut oil, 387,000 lbs.; edible olive oil, 130,000 lbs.; oleo oil, 127,000 lbs.; rapeseed oil, 49,000 lbs.; sesame oil, 38,000 lbs.; neat's-foot oil, 19,000 lbs.; and all other vegetable oils, 2,051,000 lbs.

Iodine Number

Fat is dissolved in carbon tetrachloride and treated with solutions of potassium bromate, potassium bromide and hydrochloric acid. Bromine is liberated and adds on to the double bonds in the fat. Excess bromine is titrated back with 0.1 Normal sodium thiosulfate with the addition of potassium iodide and starch solution. Ernst Ullrich. *Wollen- & Leinen-Ind.* **60,** 67 (1940); through Chem. Abs.

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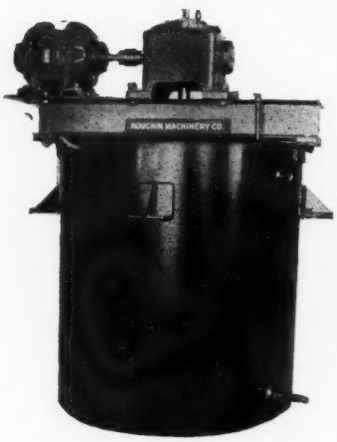

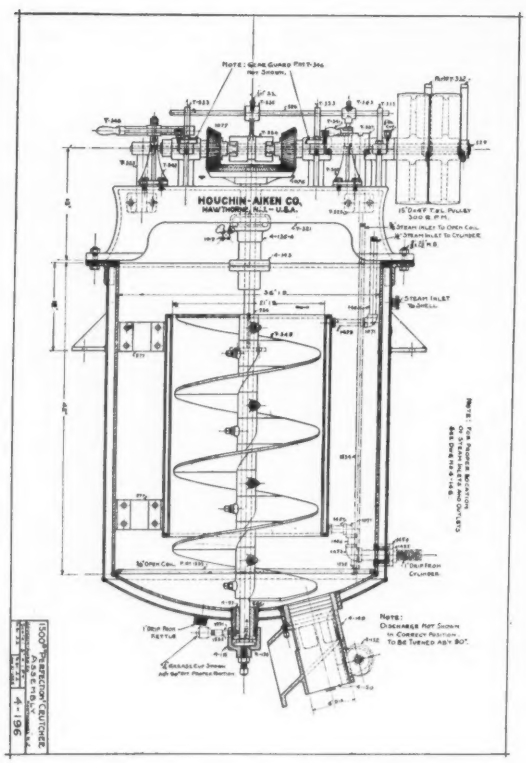

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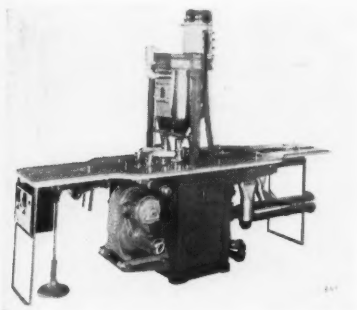
IF YOU want additional information on any of the items described below or if you want any of the bulletins, catalogs, etc., write to the MacNair-Dorland Co., Inc., 254 West 31st St., New York, mentioning the number of the item.

802—Augur Feed Filling Machine

A new augur feed powder filling machine recently offered by Stokes & Smith Co., Philadelphia, is



said to have a number of advantages over previous models. Claims for the "Duplex and Deluxe" machine include production of 70 units per minute and upward, dustless operation, variable speed drive, non-corrosive parts, adaptability to a wide range of package sizes, and fully enclosed operating mechanism.

803—Drum Cleaner

Vol-u-meter Co., Buffalo, N. Y., has just put on the market a new compact inside drum cleaner powered by a ¼ h. p. motor. No lifting of the drum is necessary in using the equipment, it is said, and drive wheels are wide enough to prevent denting of drum sides. According to the manufacturer, both ends of the drum can be cleaned by alternate tipping of the carriage.

804—Adjustable Tank Supports

"Simplex Jacks for Supporting and Leveling Tanks," a new bulletin just issued by Templeton, Kenly & Co., Chicago, describes the company's line of adjustable tank supports and saddles for mounting tanks, vats and wood and metal vessels of all types. The method of welding or securing the various types of saddles directly to tanks or cradle bands is described and illustrated. Specifications and engineering data are given.

805—Water Treatment

A new booklet, "The Water Treatment of Tomorrow in Today's Engineering," just published by American K. A. T. Corp., New York, explains the theory of organic colloidal action and briefly discusses the modern trend in water treatment for boilers, distilled water stills and evaporators.

806—Laundry Detergents

Hardin Chemical Co., Brooklyn, sales division for J. L. Hardin Co., has just released a circular describing its new dry cleaning detergents for the dry cleaning and laundry trades, "Celloscope" for use in petroleum solvent, and "Chloroscope" for use in synthetic solvent.

pH in Laundering

Silicates give a pH suitable for use with soap in the laundry, at a reasonable concentration, and not falling off too rapidly below the pH of soap solution itself. The pH has an important effect on soap consumption in the laundry. With a 90-pound load at a pH of 9.9, one pound of soap is required. With pH 10.8, three-quarter pound of soap is sufficient to give comparable results. With a pH of 11.5, soap consumption was reduced to one-half pound.

At one time it was believed that a pH as high as that frequently employed today, would affect the strength of fabrics. However, tests in which the higher pH is recommended have been conducted with excellent results, showing tensile strength losses as low as 5-6 per cent after 50 washings. A pH of 11.5 is high for silks and woolens. When the pH is above 12, there is danger of damage even to cotton. Wm. Stericker. *Laundry & Dry Cleaning J.* of Canada. Feb. 16 (1941).

Deodorization of Fats

Although a great variety of methods have been proposed for rendering edible oils odorless and tasteless, it is now almost universal practice to accomplish this by a process of steam distillation under reduced pressure. Relatively volatile odor-causing substances are stripped from the relatively nonvolatile oil. These substances are probably of aldehydic and ketonic nature. In practice flavor and odor removal is observed to parallel free fatty acid removal very closely. The theory of steam distillation and results with a batch deodorizer are discussed. A. E. Bailey. *Ind. Eng. Chem.* **33**, 404-8 (1941).

Soap Changes After 6 Years

Soaps made in India and kept in a dry room for six years were examined for deterioration. These were toilet soaps perfumed with jasmine, lavender and rose, and colored light brown, lilac, and very light colored ash, respectively. The jasmine perfume which had been used contained various resinoids, while the lavender and rose contained 60 per cent of natural oils and 40 per cent of synthetics. The cakes had been wrapped in oil paper before being put into cartons.

The light brown jasmine soap showed on examination dark-colored beads on the surface, as well as fading of the color in spots. The perfume odor was still noticeable, being estimated at about half that originally present. The lavender- and rose-scented soaps had a better outward appearance but retained much less of their perfume. The author concludes that six months is about as long as soap should be aged. S. C. Ghose. *Indian Soap J.* **7**, 73-4 (1940).

Common Soap Defects

Cracking in toilet soaps is a common defect, sweating less so. Some of the factors generally held responsible for cracking in soap are: 1. Unduly high salt content from improper fitting. 2. Use of very old or dry chips with uneven moisture content. 3. Difference in temperature of soap ribbons coming from the mill and fed into the plodder. 4. Insufficient pressure in the plodder and improper temperature control there.

Sweating of soap has been attributed to the presence of low molecular-weight fatty acid soap, and of unsaturated fatty acid soap. R. G. Gupta. *Indian Soap J.* **7,** 51-6 (1940).

Saponin Washing Agent

The foaming and wetting powers of saponin make it a good washing agent when combined with a cellulose ester such as methyl cellulose. The combination has better detergent properties than saponin alone, and is suitable for washing fine fabrics and for toilet use. Its resistance to calcium and other salts makes it a good salt-water cleaner. As an example, 10 grams of methyl cellulose are mixed with 100 grams of saponin extract, brought to boiling, and then 150 grams of saponin extract added cold. A uniform emulsion results on standing. If sodium lauryl sulfate or a similar product is added in the proportion of 5-10 per cent, the properties of the detergent are much improved. H. Schmittmann Komm.-Ges. German Patent No. 696,126; through *Seifensieder-Ztg.* **67,** 480-1 (1940).

Refining Fatty Acids

Fatty acids are dissolved in liquid propane and the solution heated under pressure until dissolved impurities start to precipitate as a second liquid phase. The temperature is kept at the same point until a lower liquid layer of impurities has formed, the latter being then separated. The propane solution is next heated to a slightly higher temperature to cause an additional quantity of impurities to precipitate and separate as a lower layer. This layer is separated as before, and the process continued until the propane solution is free from impurities. Liquefied ethane and butane may also be used as solvent. Arthur W. Hixon and Ralph Miller, to Chemical Foundation, Inc. U. S. Patent No. 2,219,652.

Natural Antioxidants

A study of the effects of soybean phosphatide, lecithin and cephalin on the oxidation of soybean oil showed that no observed relation existed between the concentration of these substances and their degree of activity. M. Nakamura and S. Tomita. J. Soc. Chem. Ind., Japan **43,** Suppl. binding 245-6 (1940); through *Chem. Abs.*

Cleaning Aluminum

(*From Page* 27)

which is brightened electrolytically and then given a thin aluminum oxide coating. In cleaning such reflectors, it is, of course, of the utmost importance that safe cleaners be used, since otherwise the coating will be attacked and the reflectivity greatly reduced.

Causes of Corrosion: In order to assist in explaining certain of the problems associated with cleaning, it seems desirable to discuss corrosion and its causes. Corrosion of aluminum by most neutral salt solutions is not the result of direct chemical action, but rather is electrochemical in nature. This means that it is associated with the flow of electric currents over measurable distances. It has actually been possible to tap the current flow between the local areas on the aluminum surface which have suffered attack and the adjacent areas and to correlate the weight loss and the current by the use of Faraday's Law[4]. Since corrosion is electrochemical, the stimulating effect of heavy metal salts which was mentioned, becomes more readily explainable. If aluminum is immersed in a solution containing, for example, copper chloride, some of the aluminum dissolves and replaces the copper from the solution. Thus, tiny particles of metallic copper are deposited on the surface of the aluminum. Electric currents can then flow from the aluminum to the copper with a resulting amount of attack on the adjacent aluminum surface. Because of this current flow, more and more copper is deposited from this solution onto the already precipitated copper particles on the aluminum surface. With continued duration of exposure, this mechanism would lead to an increasing attack, provided all copper adhered to the aluminum surface. However, if by some suitable cleaning procedure, deposited copper particles were removed from the aluminum surface, it is obvious that the velocity of attack should be decreased. This has been verified experimentally. Both pans shown in the accompanying photograph were exposed to the action of boiling tap water (New Kensington, Pa.) to which 0.5 p.p.m. of copper (as copper sulfate) was added. The upper pan was emptied, cleaned with steel wool and soap, and refilled with new portions of the same treated water every four hours. The lower pan was treated in the same manner except that it was not cleaned. At the end of 324 hours the uncleaned pan was pitted completely through, while the other was still in excellent condition.

Certain chemical cleaning methods have also been found to be satisfactory in reducing rates of attack by solutions contaminated with heavy metal compounds. In addition to this obvious effect of cleaning, there is another less evident benefit. It will be noted that in the uncleaned pan of the photograph only about 20 corroded areas are visible. All of the attack which occurred was localized in these areas. Since corrosion was so highly concentrated, it resulted in rapid perforation. However, if by means of periodic cleaning the films on the aluminum surface were removed, new sites of attack would form at other areas, thus spreading out the corrosion and resulting in much slower perforation. This is an-

[4] R. H. Brown and R. B. Mears, *Trans. Electrochem. Soc.* 74, 495, (1938).

other one of the beneficial results of proper cleaning.

Blackening of Aluminum Utensils by Tap Waters: When aluminum cooking utensils are exposed to the action of certain types of hot tap water the surface appears to become rapidly coated with an adherent brown to black film. This film has often been ascribed to the precipitation of impurities from the water or from the aluminum. Investigation has shown, however, that it is generally purely an optical effect and is caused by a slight etching of the metal by the boiling water. The optical effect is produced by light interference on the etched surface of the metal. Now the fact that this darkening is an optical effect and is not made up of impurities does not improve the appearance of the utensil. However, the pan can easily be brightened by further etching, always by a suitable cleaner but many times even by continued boiling in the same tap water. Of course, dark coatings can be formed on aluminum from causes other than this optical effect. Thus, in many cases (often when uninhibited alkaline cleaners are used) heavy black layers are formed. Undoubtedly these dark layers are often made up of precipitated iron, copper, and possibly silicon, which were present in the aluminum alloy being cleaned.

Cathodic Protection: The principle of cathodic protection is essentially that of the clad alloys which have been described. When aluminum is in moist contact with practically any other industrial metal, a current will flow from the aluminum to the other metal and this, of course, results in electrolytic corrosion of the aluminum. Protection by the use of the duplex alloys is adequate in some cases but that method is limited because the clad alloys are available only in sheet form, except for a limited production of clad wire. Furthermore, protection is afforded only as long as the coating remains, and it cannot be applied to existing equipment.

An effective method of protection comprises attaching zinc plates or strips to the aluminum. In such a combination the aluminum is cathodic to the zinc, i.e. current flows from the zinc to the aluminum, and, as a result, the aluminum is protected at the expense of the zinc which can be replaced.

This method of protecting aluminum is not merely of academic interest but has served in some very practical applications. An example of such an application was the protection of aluminum from the action of a very corrosive water in a heat exchanger used in a rayon plant. A battery of aluminum coils carrying inhibited brine was mounted in a wooden tank through which flowed softened city water. After a few weeks of service, attack on the outside of the aluminum coils was observed. Zinc strips were then attached at intervals along the coil and no further attack occurred. After nearly two more years of service the coil is still in excellent condition.

Cleaning Aluminum: Like all other metals, aluminum must be cleaned at certain stages in its processing, and after it has been fabricated into useful articles, in order to improve or maintain its appearance, to make it sanitary and to minimize corrosive attack. For certain purposes cleaning compounds or chemicals that will uniformly remove a small amount of metal from the surface of the aluminum are often very useful but it is also important to have available detergents that will clean without injuring either the metal in process or the finished article. The use of a harmful cleaner may permanently impair the appearance or even completely destroy an aluminum article. A classic example of this occurred when an acquaintance immersed his aluminum fenders in a tank of caustic soda in order to remove the paint. His lack of knowledge was expensive.

Cleaners for aluminum may be classified as "safe," "partially safe," and "harmful." Other simple chemical solutions and commercially compounded materials may be included and termed "surface-renewing cleaners."

"*Safe*" cleaners are those which can be used in any concentration upon bare or Alumilite-coated surfaces without injury to the surface. In this group belong such organic solvents as toluene, naphtha and kerosene. Certain stabilized solvents of the chlorinated hydrocarbon type and even water solutions of ordinary soaps or alkaline detergents, such as soda ash or trisodium phosphate, can often be placed in this safe class, provided they contain a sufficient amount of corrosion inhibitor. (Sodium disilicate or sodium chromate are familiar examples of corrosion inhibitors). Other materials which are generally safe are liquid waxes and light mineral oils. Water or organic solvent solutions of many of the newer synthetic soaps, wetting agents, or sulfonated oils may usually be rated as "safe" cleaners, especially if a small amount of a suitable inhibitor has been added. It is imperative that safe cleaners be used on bright finished aluminum surfaces, Alumilite-coated surfaces, and on complicated, built-up structures where there is a chance that the cleaning solutions can lodge in inaccessible corners or crevices and remain there for extended periods of time.

"*Partially safe*" cleaners are those which will injure bare or Alumilite-coated metal under some conditions but which may be safely used in a fairly wide range of concentrations. If such cleaners must be used, care should be taken to employ them only under conditions which have been established as being safe.

"*Harmful cleaners*" should be avoided unless they are of the type that may be employed as "surface-renewing" cleaners. This class of cleaners are those which are intended to remove uniformly a small amount of metal from the surface of the aluminum. The new surface thus exposed should have an attractive bright or white appearance. Surface-renewing cleaners may be either chemical solutions which etch or dissolve the surface layers or abrasive pastes or pow-

ders which remove the surface layers by mechanical action. The most common of the etching type of cleaners are hot, dilute, caustic soda solutions, phosphoric acid solutions and cold, dilute, hydrofluoric acid solutions. A useful surface-renewing treatment employs a solution containing 10 per cent nitric acid plus 1 per cent hydrofluoric acid at room temperature. Another is a solution containing 10 per cent sulfuric acid and 1 per cent sodium fluoride which is also used at room temperature. Naturally, such solutions must be used with care because of their harmful action on human skin.

Cleaning Problems: There are many specific cleaning problems of probably equal importance but only a few of the outstanding ones can be mentioned in this brief review. Because of their rapidly increasing use in many fields, the cleaning of both plain and colored Alumilite finishes should be emphasized. Aluminum which has been given this artificial oxide coating does not require as much attention in order that its original appearance be preserved as does bare aluminum. However, this coating, though hard and resistant to many agents and conditions, is thin and most strongly acid and alkaline solutions will destroy it.

One of the early applications of the Alumilite coatings was on cafeteria trays. Here the harmful effect of strongly alkaline cleaners was immediately encountered. While many mild soaps and cleaners were found satisfactory for washing Alumilite-coated surfaces, some of the strong compounds used in dishwashing machines were found to be quite harmful. It was soon learned from such experiences that before any cleaners are recommended for use on Alumilite-coated products, tests should be made to prove that they are safe. Without such tests very serious damage may result and the cleaner or the aluminum product might get a bad name which is not deserved.

Alumilite finishes, as used in the railroad, bus and air transportation fields, are, in most cases, for decorative purposes and considerable care should be given to the selection of cleaning materials and cleaning methods so as to maintain their good appearance under operating conditions. The use of Alumilite finishes in these fields may be divided into two general classes (a) inside finish and (b) outside finish. The inside parts consist of decorative mouldings, window sills, chair bases and grab handles, parcel racks, lighting fixtures and ventilating grilles. These parts, being inside, generally keep their appearance well and require very little cleaning other than wiping the surface with a cloth and occasionally cleaning with a rag moistened with liquid wax.

The use of Alumilite finishes on the outside of railroad cars and buses is comparatively new. One of the early examples is on railroad coaches which were put into service in March 1940. These coaches have two 4½" wide belt rails running from end to end, one at the top and one at the bottom of the window openings. The cleaners ordinarily used by the railroads badly stained these mouldings. After considerable experimentation is was found that the best method of cleaning them was with a lamb's wool polishing pad driven by a motor-operated polisher using a wax type of cleaner rather than a solvent. In cleaning, the cars are first washed with water and no attention is given to protecting the moulding. After polishing operations are over and the cars are dry, the mouldings are gone over with the lamb's wool polishing wheel. If the appearance of the moulding indicates it to be necessary, the wax is used.

An outstanding example of Alumilite finish is in the newer type coaches (buses). The entire side panels of these coaches consist of rolled Alumilite moulding. About 400 of these buses are on the road today. Two hundred more will be on the road by the end of June, and still more are to be built. A general cleaning procedure has been developed for these buses. When a bus comes in from a trip it is immediately wet down with water, a safe cleaner is applied, and, after a second wash with water, any road tar or other material which the cleaner has failed to remove is taken off with a solvent such as kerosene or mineral spirits and the job is dried. A wax coating, which seems to last about 30 days, had been applied to the new bus at the factory. Rewaxing is done by the local garage. The wax prevents any deep staining of the Alumilite finish, and such stains as do accumulate are easily removed by the cleaner.

Keeping these trains and buses in good condition is not difficult; it merely requires an understanding of the properties of Alumilite coatings, a knowledge of local water conditions and of safe, efficient cleaners. A pressing need today is for a nation-wide service on cleaning these vehicles with a view of coordinating the materials and practices used by the various transportation systems so that they will all receive the same safe treatment wherever they may be.

Another important cleaning problem is that of cleaning aluminum beer barrels in the brewery. Any barrel in service accumulates a film of beerstone and organic matter. Today various acid and strongly alkaline cleaners are being used on aluminum barrels to remove this film. Many of them, if used wisely, will do a satisfactory job but others may cause trouble. What is wanted is a safe, efficient and economical cleaner, one that is fool-proof and that can be used without the installation of expensive handling equipment. Such a cleaner should find a good market and should be well recommended.

Neither the aluminum industry nor the cleaning industry are static. New uses and new requirements for both the metal and for cleaners are continually being created and this will continue. Each year, in the United States, over four hundred million pounds of new aluminum are being put to use, and increased production facilities are being developed. This will mean a demand for more, safe, suitable and efficient cleaning materials.

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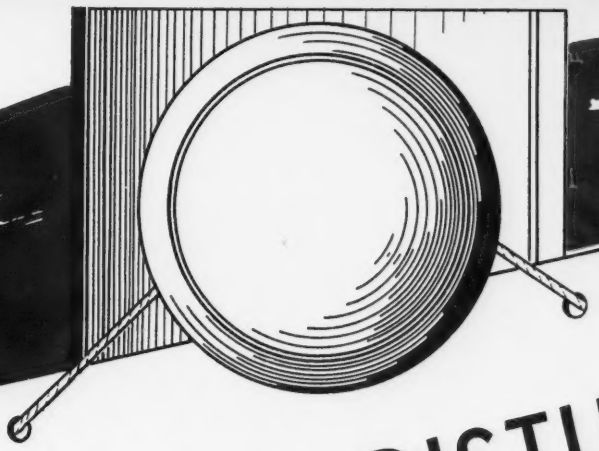

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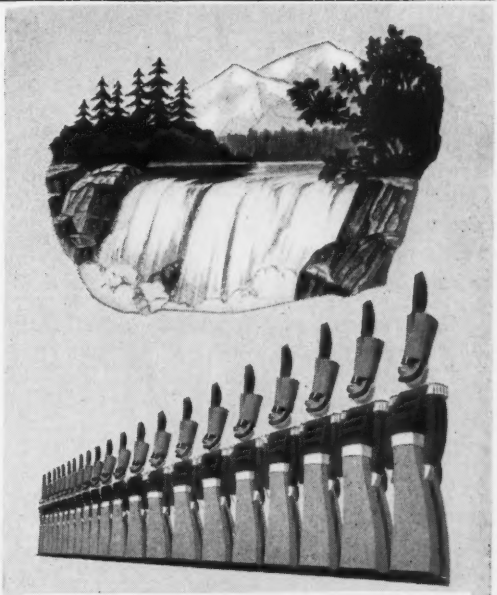

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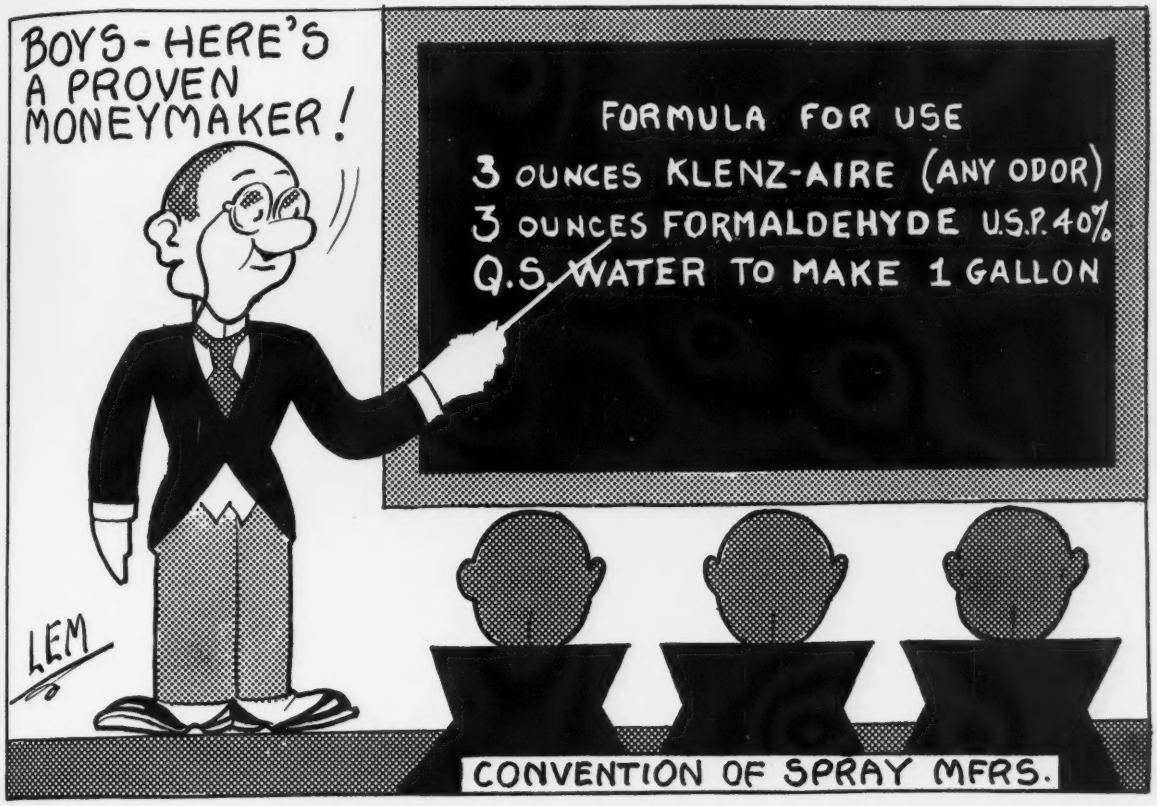

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Clover	Lilac	Sandalwood
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3 ounces Formaldehyde U.S.P. 40%
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This formula makes a finished deodorant spray in milky emulsion form which may be colored any shade to make it more attractive.

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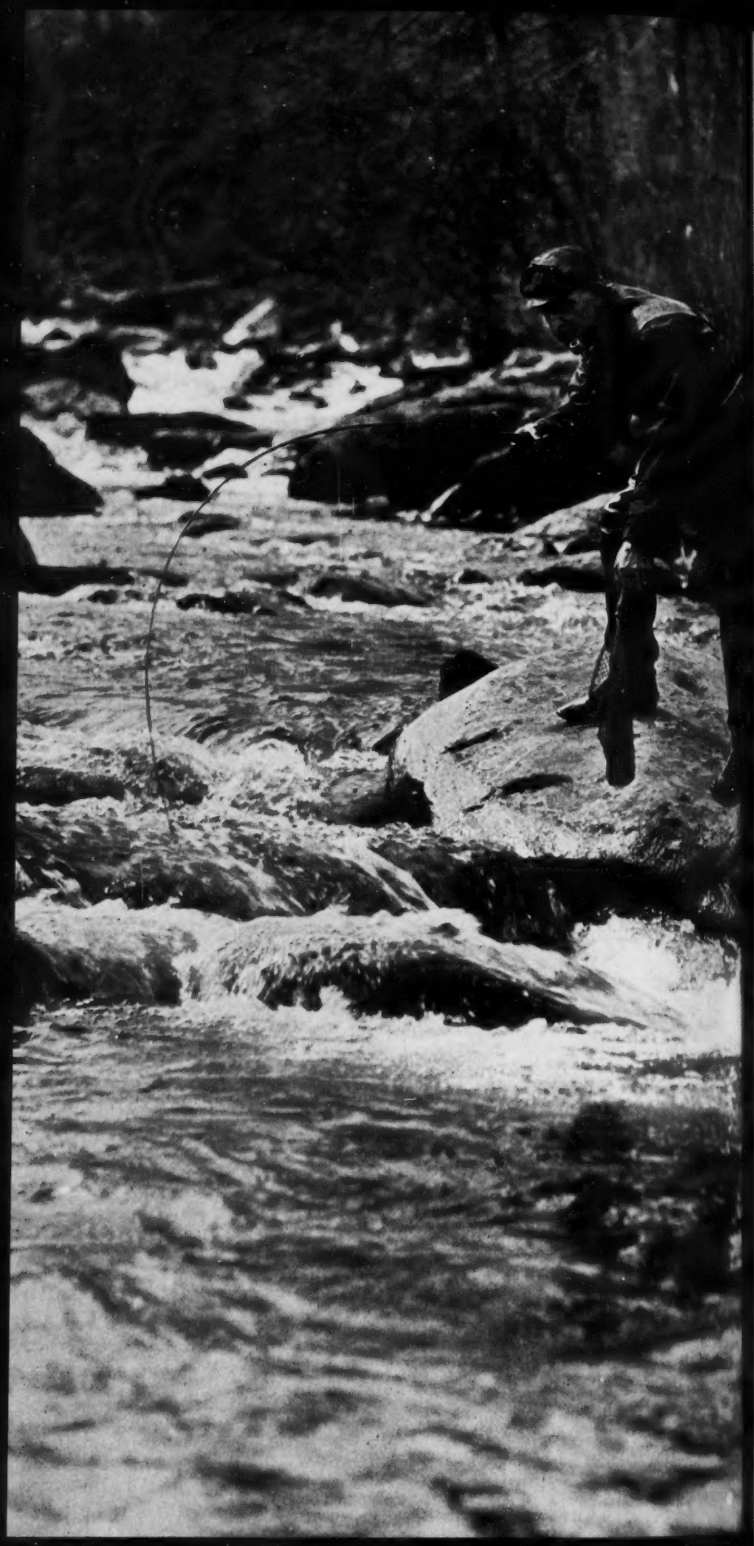

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2 Produce a snowy-white emulsion in water.

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when and wherever they are used, for exaggerated as well as normal insect control problems, insecticides based on Prentiss Pyrethrum Extract will give consistently dependable kill. There is none of that "almost as good" atmosphere about a high pyrethrin content spray. The housewife, the retailer, the insecticide manufacturer can all share that feeling of easy confidence as to the dependability of a product based on Prentiss Pyrethrum Extract.

The formula economy of synthetics is appealing, of course . . . but it can act as a boomerang too. Send your 1941 insecticide to market prepared to meet every insect control problem it may encounter. Trust a high pyrethrins content in your 1941 model to get a bigger share of the 1942 sales total for you.

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3. **Is your package shapely and practical in design... easy to grip, sparing in shelf-space?**
4. **Does the closure provide a really effective, airtight, leakproof seal?**
5. **Does the closure spin off and on with a simple twist?**
6. **Does your package offer maximum merchandising opportunity?**

If there's a "NO" on your check-list (or a doubt in your mind) you owe it to yourself and your sales figures to investigate these Anchor Hocking packages for liquid products

Notice the shapely design and graceful lines of these Ovals...with side ridges to support the grip...oval base for shelf economy...generous space for easy labeling...sturdy construction for trouble-free performance on your production line. Altogether a strong, attractive container that adds lustre and eye-appeal to your product.

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Anchor Shellback Caps are available in a number of distinguished stock designs, colors and finishes...or you may have your own private design, specially embossed, coated or lithographed. With a highly decorative Anchor Shellback to add the finishing touch to one of these Ovals, you'll have a complete package that offers new merchandising, promotion and display opportunities, that will put new life into your salesmen, pep into the retailer, impetus into your sales.

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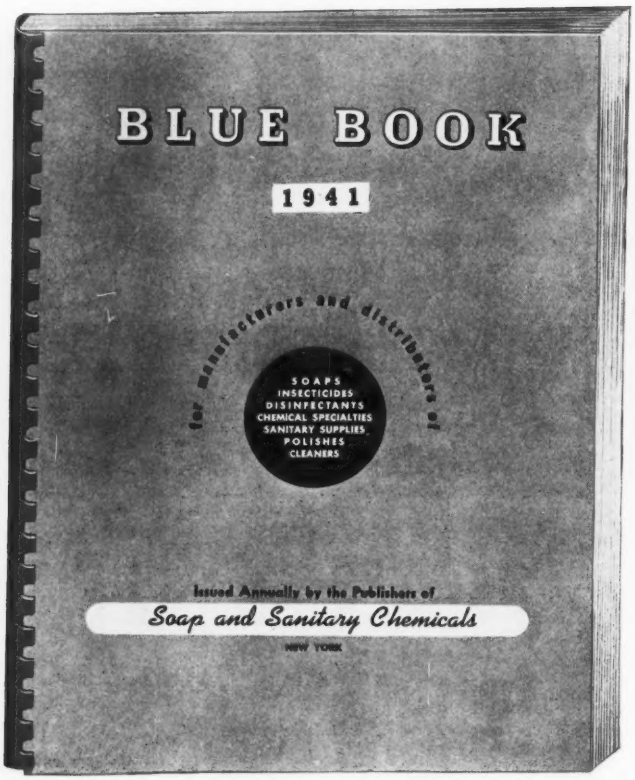

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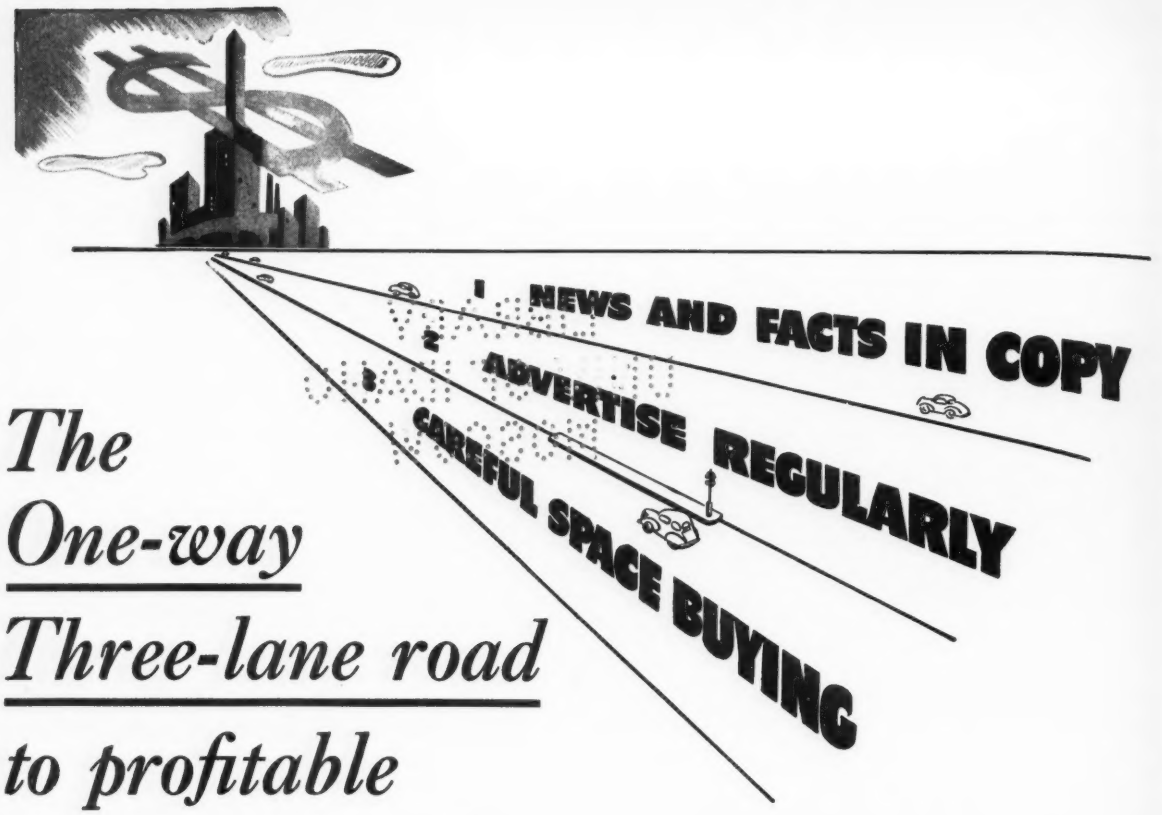

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SANITARY PRODUCTS

A SECTION OF SOAP

Official Publication, Nat'l. Assn. of Insecticide & Disinfectant Manufacturers

WORD has come to us from Washington that a further reduction in the funds for enforcement of the Insecticide Act of 1910 by the Department of Agriculture is contemplated in the budget now under consideration. This same fund was cut last year. A further cut at this time, we fear, may interfere seriously with the enforcement of the Insecticide Act and permit the chiseler and faker to flourish again just as he did 30 years ago. We also fear that much valuable insecticide research being carried on by the Department of Agriculture may also be hampered, as we cannot see any other result of these budget cuts year after year. In spite of the fact that all non-defense moneys are being cut to the bone and the cry is for reduction in government expenses, we feel that the Insecticide Act is vitally important to the reputable insecticide manufacturer and to the consumer, and desire to go on record against this reduction which we feel will endanger its effective enforcement.

IF SALES and profits in the insecticide industry over the past ten years had kept pace with scientific advances and quality improvement, there would indeed be little cause for complaint. Better and better insecticides from year to year and less money in producing and selling them,—it does not seem to make sense, but it is a fact.

Both agricultural and household insecticides have been brought to a high state of effectiveness by well-directed, continuous efforts of entomologists and chemists. Now, the time has come to give a lot more attention to doing the same thing in sales, consumption,—and also profits. These latter obviously represent the weak side of the insecticide picture, and right now constitute the No. 1 problems of the industry,—problems to be attacked by salesmen and executives in the same manner in which the scientific men accomplished their job.

ABOUT a year or so ago, we were told by the management of a large restaurant chain that they depended upon plain soap, water and elbow grease to keep their lavatories clean, and that they did not require any "trick" products, meaning specifically deodorizing blocks, as aids to sanitation. Just recently, an inspection of three restaurants of this same chain revealed that their lavatories, although appearing to be clean, do not smell very nice,—in short they stink.

In another instance, we heard of the case of the president of a large railroad who happened to use the public lavatory facilities in one of his road's largest stations. His personal findings brought action in the direction of practical modern sanitation,—and quick action. Yet the management of this same railroad had informed our reporter not so long ago that they too were perfectly satisfied with their antique methods of sanitation.

These two cases, we feel, are typical of a certain school of thought among industry and institutions that ordinary soap-and-water cleanliness and practical sanitation in public places are synonymous. Those with long years of experience in practical maintenance work know this belief is erroneous, but it takes a big stink or a railroad president to convince some people that they have dropped behind the times and should wake up.

Insecticidal Properties of the FATTY ACIDS

By Dr. E. G. Thomsen and Dr. M. H. Doner

The J. R. Watkins Company

THE fatty acids comprise a group of aliphatic, monobasic acids, either saturated or unsaturated. They are oxidation products of the primary alcohols and aldehydes or from the hydrocarbons by the equivalent of an oxidation of the methyl group. The name "fatty acids" is due to the occurrence of the higher homologs such as palmitic, stearic and oleic in natural fats and oils. They may be combined with alkalies, metallic salts or certain organic compounds to form soaps. While the term "soap" is ordinarily limited to the common everyday soda or potash soap, in this article we will include it in the wider application of the term.

As it is quite commonly held by insect toxicologists that the fatty acids are the actual toxic constituents of the soaps and glycerides as will be discussed later on in this paper, we agree with this premise. As a result of the data supporting this conclusion, insecticides involving fatty acids may be grouped into three divisions: (1) the soaps of fatty acids; (2) the natural fats or oils (glycerides) and (3) the free fatty acids.

Soaps are widely employed as wetting and spreading agents for insecticidal sprays (chiefly nicotine sprays) and as emulsifiers for petroleum oils. In these cases their value depends not so much upon their own toxicity but by physically improving the effectiveness of the toxic materials with which they are used by lowering the surface tension or spreading power of the spray solution. While many of the newer wetting agents (sulfated alcohols, phenols, etc.) are replacing ordinary soaps in proprietary insecticidal compositions, soaps are still widely recommended in entomological literature as an additive to spray preparations.

Upon the authority of Simmon (22), the Gauls were the first to manufacture soap in Europe, probably having acquired the art from the Phoenecians. Theirs was a product prepared from animal fat and wood ashes. The Romans learned the art of soap-making from the Gauls. In spite of these early records, soap-making was not introduced into England until the fourteenth or fifteenth century and, as Simmon remarks, "It was then only a luxury for the rich, and but little was used." This is a far cry from the status of soap-manufacturing in 1939 during which time, according to government statistics, over 3,500,000,000 pounds of soap were manufactured in the United States. This amounts to approximately 27 pounds of soap per annum for each man, woman and child.

Just when soap was first used to control noxious insects is not definitely known. The early writers in entomological literature recommended soap suds. Shepard (19) cites the use of whale-oil soap as the cheapest and most effective insecticide for destroying the rose chafer, a recommendation for which the Massachusetts Horticultural Society, in 1842, offered a money premium. The specific recommendation was 2 pounds of whale-oil soap in 15 gallons of water. In a U.S.D.A. Farmers' Bulletin, written in 1908 by C. L. Marlatt (16), then Entomologist and Assistant Chief of the Bureau of Entomology, definite recommendations for fish-oil soaps were made for Summer control of aphids or plant lice, the pear slug, and as a Winter wash for the San José Scale and other allied forms. "Any good soap," commented Marlatt, "is effective in destroying soft-bodied insects, such as aphids and young or soft-bodied larvae. As Winter washes, in very strong solution, they furnish one of the safest and most effective means against scale insects. The soaps made of fish oil and sold under the name of whale-oil soaps are often especially valuable, but they are variable in composition and merits." Shepard (19) has pointed out that much of the "whale-oil" was derived from "all sorts of fish refuse and sold under the older trade term."

Soap, then, has long been advocated for the control of insect pests. A bibliography on its various insecticidal uses would number thousands of references. Bourcart (1) reviews the use of soap as insecticide chiefly on the basis of European recommendations. When used alone, soap solutions are recommended for the Apple Back Beetle *(Tomicus dispar)*, Wire Worms, the Imported Cabbage Worm, Mole Cricket *(Gryllotalpa vulgaris)*, ants infesting trees, Chinch Bugs, White Peach Scale *(Diaspis pentagona)*, Woolly Aphis *(Schizoneura lanigera)*, coccids, thrips on grain crops and locusts.

Obviously, such recommendations would scarcely be recognized by present-day entomologists inasmuch as the newer insecticides are far more

efficient. Nevertheless soap continues to find considerable use as an insecticide. For instance, the index of "The Review of Applied Entomology" for 1937 listed some 55 references involving soap for killing various insects.

Toxicity of Fatty Acids and Soaps

The fatty acids that occur in nature are relatively few in number as compared with those that can be obtained by synthetic means. The former include the following:

A. Saturated	$C_nH_{2n}+_1COOH$ or $C_nH_{2n}O_2$
Formic Acid...	HCOOH
Acetic Acid....	MeCOOH or CH_3COOH
Propionic Acid.	EtCOOH or C_2H_5COOH
Butyric Acid...	PrCOOH or C_3H_7COOH
Valeric Acid...	BuCOOH or C_4H_9COOH
Caproic Acid ..	$C_5H_{11}COOH$
Oenanthilic Acid.	$C_6H_{13}COOH$
Caprylic Acid..	$C_7H_{15}COOH$
Prelargonic Acid.	$C_8H_{17}COOH$
Capric Acid....	$C_9H_{19}COOH$
Lauric Acid....	$C_{11}H_{23}COOH$
Myristic Acid..	$C_{13}H_{27}COOH$
Palmitic Acid..	$C_{15}H_{31}COOH$
Margaric Acid..	$C_{16}H_{33}COOH$
Stearic Acid...	$C_{17}H_{35}COOH$
Arachidic Acid.	$C_{19}H_{39}COOH$
Behenic Acid...	$C_{21}H_{43}COOH$
Carnaubic Acid.	$C_{23}H_{47}COOH$
Hyaenic Acid ..	$C_{24}H_{49}COOH$
Cerotic Acid...	$C_{25}H_{51}COOH$
Melissic Acid ..	$C_{29}H_{59}COOH$
B. Unsaturated	$C_nH_{2n}—_1COOH$ or $C_nH_{2n}—_2O_2$
Hypogoeic Acid.	$C_{15}H_{29}COOH$
Oleic Acid.....	$C_{17}H_{33}COOH$
Erucic Acid....	$C_{21}H_{41}COOH$
C. Unsaturated ...	$C_nH_{2n}—_3COOH$ or $C_nH_{2n}—_4O_2$
Linoleic Acid..	$C_{17}H_{31}COOH$
D. Unsaturated ...	$C_nH_{2n}—_5COOH$ or $C_nH_{2n}—_6O_2$
Linolinic Acid..	$C_{17}H_{29}COOH$

Using emulsified free fatty acids on several species of aphids, Siegler and Popenoe (20, 21) determined that practical toxicity begins with caproic acid and reaches the peak at or slightly above the C_{10} point. Their results are shown in Table "A."

Table A

Acid	*Dilution*	*Test Insect*	*Kill*
Caprylic	1-5000	Black Chrysanthemum Aphid.....	90%
Capric	1-1200	Green Apple Aphid.....	99%
Lauric	1-1200	Green Apple Aphid.....	92%
Myristic	1-1200	Green Apple Aphid.....	78%

These findings were confirmed by Tattersfield and Gimingham (23) at the Rothamsted Experimental Station.

Obtaining the purest fatty acids obtainable, Dills and Menusan (3) emulsified them and ran tests on the bean aphid *(Aphis rumicis)*. The results, which confirm the reports given above, are given in Table "B."

Table B

Fatty Acid, 1/6%	*Mortality with Free Acid*	*Mortality with Soap* (0.5 Conc.)
Caproic	15.4	6.9
Caprylic	18.1	36.9
Capric	45.0	55.2
Lauric	42.0	67.1
Myristic	16.9	30.4
Palmitic	15.1	24.9
Stearic	10.8	12.8
Oleic	19.3	81.1
Check	2.7	4.9
Emulsifier ¼%.	4.0	...

One of the difficulties attending a study of the insecticidal value of soaps is the fact that soaps vary greatly in their water content and in proportion of fatty acid salts. Dills and Menusan (3) state than an examination of soaps commonly used for spraying revealed a water content varying from 30 to 70 per cent. Previous data presented in this paper has already shown that considerable differences in toxicity exist among the fatty acids. The above writers have clearly pointed out that most of the experimental research has been comparing "different commercial brands instead of different kinds of soap and their conclusions and recommendations are reliable only until the manufacturer changes his product. For that reason most of the experiments in the use of soaps have only transient value and it is found necessary to repeat them each time a new brand appears or an old one is altered." On the contrary, by preparing soaps from fatty acids a definite product is obtained which can be tested for toxicity as against the free, emulsified fatty acid.

Potassium, sodium and ammonium soaps were prepared by Siegler and Popenoe (20, 21) who observed that the killing power of the soaps was much less than the corresponding acids in free, emulsified form. That the sodium soaps possess greater toxicity than potassium soaps was shown by Fleming and Baker (4) by tests conducted upon adult Japanese beetles.

Kraiter (13) prepared neutral sodium, potassium and ammonium soaps from fatty acids extracted from vegetable oils, using the cabbage aphid *(Brevicoryne brassicae)* as the test insect. The sodium soaps were found to be more toxic in all concentrations than potassium soaps. The ammonium soaps were the least effective.

Toxicity of Glycerides

The naturally-occurring fatty acids are to be found in varying amounts in natural oils, fats and waxes. This is true for the majority of those discussed in this paper. Some of the more common oils with their fatty acid contents are the following:

Oil	*Analysis*	*%*
Blown Castor Oil.	Ricinoleate	100
Coconut Oil.....	Capric	10
	Lauric	45
	Myristic	20
	Palmitic	7
	Stearic	5
	Oleic	2
Corn Oil.....	Oleic	45.4
	Linolenic	40.9
	Palmitic	7.7
	Stearic	3.5
Cottonseed Oil....	Palmitic	23
	Oleic	21
	Linoleic	46
Raw Linseed Oil..	Linolenic	28
	Linoleic	72
Linseed Oil.....	Oleic	5
	Linolenic and Linoleic	80
	Palmitic	15
Palm Oil.....	Palmitic	98
	Stearic	1
	Heptadecylic	1
Peanut Oil.....	Stearic	4.9
	Palmitic	6.3
	Linoleic	21.6
	Oleic	60.6
Olive Oil.....	Oleic	84
	Linoleic	5
	Glycerides of Saturated Acids	11
Soy-bean Oil.....	Oleic	40
	Linolenic	60

Dills and Menusan (3) prepared potassium soaps from several oils and studied their toxicity upon several species of insects in a field insectary and greenhouse. Olive oil soap was the most toxic; coconut, menhaden and cottonseed oil soaps were about equal in toxicity; castor oil soap was least toxic. The soaps were used at 0.50 and 1.0 per cent concentrations.

Potassium soaps of cottonseed oil, soybean oil, raw linseed oil, boiled linseed oil, standard oleate, blown castor oil, peanut oil and coconut oil were tested upon adult Japanese beetles by Fleming and Baker (4) and the descending order of effectiveness was found to be in the order named above.

A number of soap washes were tested in the laboratory by Frost (5) against red spider and the terrapin scale on peach. The results given in Table "C" show the high toxicity of these materials.

Table C

Insect	*Material*	*% Active Ingredients by Volume*	*Test I % Mortality*	*Test II % Mortality*
Rep Spider.....	Linseed Oil-Potash Soap...	2	99.2	95.9
Rep Spider.....	Corn Oil-Potash Soap.....	2	99.2	97.6
Rep Spider.....	Coconut Oil-Potash Soap...	2	96.4	97.8
Terapin Scale ..... (Mature Scales)	Linseed Oil-Potash Soap...	2	100.0	...

Toxicity to Plants

The use of any chemical as a plant insecticide is dependent upon its degree of safety to plants when used in sufficient concentration to kill insect life. We have already stated that soap solutions in concentrations of 1 per cent or stronger are toxic to many soft-bodied insects. Are such concentrations safe to plants?

This problem was studied by Ginsburg and Kent (7) using a highly insecticidal potassium-coconut-oil soap as the test insecticide. Spray solutions containing 0.25, 0.5, 1.0 and 2.0 actual soap were made up and applied with a 3 gallon knapsack sprayer to some 54 different varieties of garden, orchard, greenhouse and ornamental plants. Observations for plant injury were made during the subsequent two weeks. At the lowest concentrations used (0.25%—0.5%) no injury developed, although at 0.5 per cent to delicate flowers. At the 1 per cent level, many greenhouse and garden plants suffered injury, but orchard trees were not affected. All plants were injured when the soap was increased to 2 per cent.

According to Bourcart (1) the greater the free caustic alkali and free alkaline carbonate content of soaps, the more severe the injury to plants. To quote: "Solutions of Marseilles soap (hard soap) are less injurious than soft soap; the latter becomes injurious, according to plant treated, from 0.66 per cent; it is dangerous to flowers from 1.32-2.5 per cent, for soapy sprayings prevent them from producing fruits; finally, it attacks the skin of stone fruit, and injures the leaves when tender. Used in Winter at great strength (18-24 per cent solutions) soap renders the trees sterile; this is not the case with 6-12 per cent solutions, except for the peach."

Carefully-prepared soaps of fatty acids were tested upon a series of plants by Dills and Menusan (3). Their results are shown in Table "D":

From these observations the writers concluded that plant injury decreases as the molecular weight of the soap molecule increases and noted that, especially in the case of capric and lauric acid, plant injury may occur before the insects are controlled.

One per cent solutions of olive, peanut and tea-seed oils were found to be safe on five varieties of half-grown squash, according to tests by Fulton and Howard (6).

Continuous spraying of trees with mineral oil emulsions frequently results in foliage injury and impairs the vigor of a tree. In an effort to find a substitute for mineral oil in sprays, Marcovitch and Stanley (15) recommended wool grease or Degras. Sprays containing 1 per cent wool grease were entirely safe on apple trees, peach trees, beans, tomatoes and tobacco. A 2 per cent solution "seemed to be effective against red spider."

Table D

	Tomato	*Tobacco*	*Potato*	*Bean*	*Cabbage*	*Nasturtium*
Caproate 1%.....	*	*	‡	‡	0	0
Caproate 2%.....	z	v	v	z	0	*
Caprate 1%.....	0	†	0	0	0	v
Caprate 2%.....	*	‡	†	v	0	zz
Laurate 1%.....	0	0	0	0	0	‡
Laurate 2%.....	0	0	0	‡	0	*
Palmitate 2%.....	0	0	0	0	0	0
Stearate 2%.....	0	0	0	0	0	0
Oleate 1%.....	0	0	0	‡	0	‡
Oleate 2%.....	0	0	0	‡	0	*
Check (water).....	0	0	0	0	0	0

0 = no injury; † = very slight; ‡ = slight; * = moderate; v = severe; z = very severe; zz = dead.

Other Uses of Vegetable Oils

1. *As a Sticker*: One of the chief difficulties attending the use of dusts for insect pest control is to get the dust particles to cling to the foliage surface in spite of light to moderate rainfall or strong winds. The tendency of recent years is for manufacturers to incorporate a material into the dust for additional adhering or sticking qualities or to select a type of diluent that possesses some degree of adherency.

Working with derris dusts for the control of the potato beetle in France, Robin (18) treated the clay diluent with fatty acids. When so treated the dusts "have the big advantage of resisting dampness and even big rainfalls." This is the only published reference we have found on this use of fatty acids. Unfortunately Robin's paper made no mention of the type of fatty acids employed or of any possible additive effect in killing power.

2. *As an Activator for Rotenone*: Lightbody and Mathews (14) found that rotenone dissolved in olive oil (rotenone forms relatively stable solutions in olive oil) is more toxic to rats than when not so dissolved.

Fulton and Howard (6) were thus led to investigate the effects of oils on certain large plant bugs (squash bug, harlequin bug, southern green stinkbug). The oils tested included tung oil, tea-seed, corn, peanut, olive and linseed oils. The derris-oil mixtures were applied in measured doses to the dorsal side of the insect's abdomen and by spraying caged insects. Mortality counts were made at 24-hour intervals. It was found that the vegetable oils increased the toxicity of derris to the squash bug much more than did a mineral oil such as petrolatum. Peanut oil gave the greatest increase in toxicity to derris. Their data is shown in Table "E":

Table E

Insect	*Material*	*Application*	*Dilution (Water)*	*Oil Used*	*Ave. Mortalities 48 hrs.*	*72 hrs.*
Squash Bug	Derris	As a Spray	0.025% Rotenone	None	2%	1.5%
Squash Bug	Derris	As a Spray	0.025% Rotenone	Tung	2%	3.0%
Squash Bug	Derris	As a Spray	0.025% Rotenone	Teaseed	16.5%	20.0%
Squash Bug	Derris	As a Spray	0.025% Rotenone	Corn	11.5%	15.0%
Squash Bug	Derris	As a Spray	0.025% Rotenone	Olive	23.0%	33.0%
Squash Bug	Derris	As a Spray	0.025% Rotenone	Petrolatum	17.5%	21.0%
Squash Bug	Derris	As a Spray	0.025% Rotenone	Soybean	3.0%	4.0%
					24 hrs.	*48 hrs.*
Milkweed Bug	Derris	Indiv. Dosage	0.01% Rotenone	Corn	9.0%	62.0%
Milkweed Bug	Derris	Indiv. Dosage	0.01% Rotenone	Cottonseed	12.0%	73.0%
Milkweed Bug	Derris	Indiv. Dosage	0.01% Rotenone	Petrolatum	14.0%	81.0%
Milkweed Bug	Derris	Indiv. Dosage	0.01% Rotenone	Peanut	56.0%	94.0%
Milkweed Bug	Derris	Indiv. Dosage	0.01% Rotenone	Olive	11.0%	78.0%
Milkweed Bug	Derris	Indiv. Dosage	0.01% Rotenone	Linseed	11.0%	66.0%
Milkweed Bug	Derris	Indiv. Dosage	0.01% Rotenone	Peanut	90.0%	100.0%
Milkweed Bug	Derris	Indiv. Dosage	0.01% Rotenone	Crude Peanut	94.0%	100.0%
Milkweed Bug	Derris	Indiv. Dosage	0.01% Rotenone	Peanut Oil Fatty Acids	88.0%	100.0%
Milkweed Bug	Derris	Indiv. Dosage	0.01% Rotenone	Peanut Oil without derris	14.0%	18.0%
Milkweed Bug	Derris	Indiv. Dosage	0.01% Rotenone	Crude Peanut Oil without derris	34.0%	36.0%
Milkweed Bug	Derris	Indiv. Dosage	0.01% Rotenone	Peanut Oil fatty acids, without derris	35.0%	38.0%

The above findings with reference to peanut oil initated experiments by Bronson and Dudley (2) with crude peanut oil for conditioning derris dusts against the pea aphid. They concluded: "It appears from the results of greenhouse and field experiments that the addition of a small quantity of crude peanut oil to a derris dust mixture appreciably increases its effectiveness against the pea aphid, and that the greater increases in effectiveness occur, in the greenhouse at least, when the relative humidity is comparatively low." The dust mixtures contained 2 per cent oil.

Additional data on the use of vegetable oils in rotenone-bearing dusts for the control of the pea aphid were secured by Gray and Shuh (8). Four per cent of the oils were added to dust mixtures containing 0.75 per cent rotenone. The results were as follows (Table F):

Table F

	Percent Mortality
Cottonseed Oil	87
Castor Oil	87
Peanut Oil	84
Coconut Oil	87
Olive Oil	93
Neatsfoot Oil	91

They concluded that the addition of 4 per cent of an animal or vegetable oil to a rotenone-bearing dust gave results superior to dust mixtures containing a wetting agent and to nicotine and pyrethrum dusts.

An ester of lauric acid, known as Mannitan monolaurate has been tested on red spider at Ohio State University and found to have high toxicity for these pests, especially when the material is combined with rotenone as will be noted from Table "G." The above combination is the proprietary insecticide known as NNOR and is covered by patent.

Toxic Action of Fatty Acids and Their Soaps

Contact poisons effect death of an insect by certain complex chemicophysical processes that ensue after the spray contacts the external body surface of the insect. Many insecticidal materials that are arbitrarily classed as "contact poisons" may, however, be taken into the body of the insect via the alimentary tract by feeding and, after being absorbed into the system cause death. In general, three modes of contact action are suggested, depending upon the chemical nature of the particular contact poison under consideration.

1. By covering or plugging the spiracles or breathing pores.
2. By directly affecting the surface tissues of the body.
3. By penetrating the integument and affecting the protoplasm of the living tissues.

When strong, concentrated soap solutions are sprayed upon insects, as for pests on dormant fruit trees, it is conceivable that the soap might form a film over the spiracles resulting in suffocation and death of the organisms. In other cases where soaps are used it seems apparent from the evidence that soap solutions do enter the openings of the larger tracheae or air tubes and bring about the same result. By immersing aphids in soap solutions dyed with India Ink, Dills and Menusan (3), for instance, observed actual tracheal penetration.

Table G

	Dilution	*% Kill*
Mannitan monolaurate	1-200	96
Mannitan monolaurate plus 1% Rotenone	1-200	100
Mannitan monolaurate plus 1% Rotenone	1-400	98.5
Mannitan monolaurate plus 1% Rotenone	1-800	97
Acetone solution containing 1% Rotenone	1-800	26.6

The second and third modes of contact action are closely related and are dependent upon the chemico-physical forces that come to play on the surface of the integument or body wall. Without entering into a detailed description of the insect integument it will suffice to point out that it consists essentially of a permeable, flexible, chitinous layer underlying a thin, lipoid or fatty layer which, in comparison, is relatively impermeable. Considerable research is being conducted by various investigators on the lipoid-solvent properties of a large range of chemical compounds. According to Hurst (11), the fatty acids, as well as the alcohols, phenols, N-heterocyclic bases enhance integumental penetration. Working with the silkworm, Klinger (12) found that oleic acid increases the rate of penetration of alkali through the integument. As will be noted more fully later, other workers have found that rotenone-bearing dusts treated with vegetable oils result in higher mortalities of pea aphids than when non-treated dusts were employed. While no explanation is given to account for these results, it is possible that the oils, along with their fatty acid contents, in some way influence the penetration of rotenone through the integument.

During an investigation of the problem of sodium fluoride absorption by the American Cockroach *(Blatta orientalis L.)*, Hockenyos (9) noted that when roaches were sprayed with 20 per cent oleic acid in alcohol, dried five minutes and then dusted with sodium fluoride powders, the effects of the powders were diminished. It was concluded that fatty acids may "serve as protective agents that tend to reduce the absorption of sodium fluoride through the body integument." In a personal communication to the authors, Hockenyos stated that oleic acid "has marked value in a derris spray since it greatly increases the penetration of the derris resin into the insect's body."

The study of the exact role of fatty acids when used alone or as a constituent of contact insecticides presents an important field of research for the insect toxicologist. The matter is not simplified when we attempt to explain the toxic action of soap solutions. A theory originally held was that the amount of caustic in the soap solution determined its toxicity to insects. Quale (17) believed that the toxicity of resin-fish oil soap toward scale was due to the amount of caustic in the wash.

Believing that the fatty acids themselves might be responsible for toxic action of soap solutions, Siegler and Popenoe (20, 21) conducted tests with a series of normal, saturated monocarboxylic fatty acids, the results of which have already been discussed. It suffices here to state their conclusion, namely, that the fatty acids penetrate the body wall and tracheae in a crystalloid condition and exert a hemolytic action on the blood and body cells.

Studies by Krater (13), on the other hand, led him to the conclusion that the soaps which hydrolyze the least are the most toxic and that the toxicity of soap solutions is dependent on the degree of solubility of the soaps in water and their ability to wet the chitin and penetrate the respiratory system.

The question as to whether the free fatty acids actually penetrate the body wall and tracheae as crystalloids is only a conjecture and hardly tenable for, as a matter of fact, and as pointed out by Wardle (24) the "degree of dissociation (of fatty acids and alkali by hydrolysis) rarely exceeds 6 per cent" and much of the fatty acid so formed "becomes attached to the fatty acid radicle of the undissociated portion."

It is obvious from the foregoing survey that soaps, fatty acids and glycerides play a significant role in the performance of certain contact insecticides. The true explanation of the insecticidal role of these materials, either when used alone, in emulsified form along with other toxicants or as an additive to rotenone-bearing dusts is fairly obscure and an interesting field of research awaits the insect toxicologist. At the present time, the authors are engaged in the study of the possible additive value of a wide range of these materials in insecticidal sprays and in conjunction with pyrethrins and the newer synthetic toxicants.

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INSECTICIDAL DUSTS

A study of the effect on mortality of electrostatic charges produced by friction in applying insecticides

BY H. F. WILSON, C. E. DIETER AND H. L. BURDICK

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A STUDY of diluents for use in rotenone-bearing dusts is being made at the Wisconsin Agricultural Experiment Station[1]. Considerable difference was noticed in the dispersion and coverage of mixed dusts on pea plants when different diluents were used. Some were dispersed evenly on the stems and both sides of the leaves, while others were dispersed unevenly and settled more on the upper surface of the leaves, with little or none on the lower surface and stems.

During the dusting experiments in the laboratory, it was noticed that all the diluents available at that time developed a measureable electrostatic charge when blown through the dusting tube used. The charges developed varied according to the diluent used and ranged from a barely measureable charge to approximately 10,000 volts, the highest point we could measure with the recording apparatus available. When oil was added to the diluents, it was also noticed that the charge was increased with some and reduced with others.

When we started the experimental work, we were using as a standard for comparison between diluents the same diluent used by Dudley and Bronson (1940). This diluent, a tremolite or fibrous talc, is designated as "Standard Talc" in this paper. Standard Talc was one of the diluents that developed a low charge when used without rotenone or oil, and the charge was not increased greatly when used in a mixed dust with oil added.

Certain other talc diluents containing a flaky or flat-like particle, produced moderate to high charges, depending upon the percentage of flaky particles present. Charges with these diluents were increased greatly when oil was added. That electrostatic charges were produced by insecticidal dusts has been reported by other workers. Dr. William Moore (1925) pointed out that "The common arsenicals may acquire a positive or negative electrostatic charge by the friction at the time of dusting. Such a charge will aid in the distribution of the dust particles over the surface of the plant but will not materially prevent the particles being washed away by the action of dews and rains."

In the discussion which followed this paper, Mr. George I. Reeves offered the following information: "An arsenical dust to be effective must contain an electrifiable (charge-retaining) ingredient; it must be subjected to sufficient friction to produce an electric charge in the course of application, and it should be applied when the air is dry . . . neglect of these points explains most of the failures and erratic results from the use of arsenical dusts. Moisture may be useful in sticking the arsenical to the plant, but it is not necessary. If the air is dry, the electric charge does the work."

Fisher, 1939, also arrived at the conclusion that a dust discharged through a constricted glass tube produced a much better coating of the dust than an open tube, and also concluded that this was due to an electrostatic charge. Diatomaceous earth, which was used in his tests, is one of the diluents we found to give a very high charge when no conditioning agent is present but produced a low charge when oil was added, and the mortality was reduced in proportion to the reduction in charge.

Two other workers have reported that the addition of oils to insecticidal dusts gave increased control. Flint and Farrar, 1932, published a paper on the use of mineral oils for better dusts. They said that mineral oils from 80 to 110 seconds viscosity were most desirable for dusting mixtures. They tested combinations of oils with most of the standard orchard dusts and came to the conclusion that such oil mixtures could be made and that the mineral oil dust applied with an orchard duster gave them much better stick than the same dusts without mineral

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oil. Because of the high velocity with which dusts are blown through orchard dusters, it is entirely possible that an electrical charge was produced which caused better sticking qualities. Bronson and Dudley (1940) found that peanut oil added to derris dust mixtures definitely increased its effectiveness against the pea aphid.

Among a dozen diluents tested, we found with our testing technique pyrophyllite (Pyrax ABB), certain flaky talcs, calcium carbonate, and gypsum produced high electrostatic charges which were reduced with the addition of rotenone. But when oil was added to the mixture, the charge was greater than that produced by the diluent alone. Ground cubé and derris root were found to have a charge opposite to that of the diluents reported. The problem became still more interesting when it was noticed that the rate and percentage of kill usually increased in proportion to a general increase in the electrostatic charge produced by a mixed dust. If the mixed dust produced a low charge of only 200 to 300 volts in being expelled from the dust tube, the kill was low, usually below 50 per cent. If the charge was 700 or 800 volts the kill was medium, and if the charge was 2,500 volts or more, the kill often reached 100 per cent. However, there were some exceptions, and a few mixed dusts containing clay diluents which gave high charges, did not produce good kill.

In making a survey of the diluents in use, a number of clays, talcs, and diatomaceous earths were found in general use in mixed rotenone-bearing dusts. Samples of some of these were collected and compared experimentally. The preliminary comparisons showed that in general the clays were not so good as the talcs and that some talcs were much superior to others. Several samples of diatomaceous earth were even poorer than some clays. Samples of silica dust were also found to be very poor.

The particle size did not seem to matter, as calcium carbonate and gypsum were found to have very small sized particles in comparison with the talc. In the tests reported, mixed dusts capable of producing high electrostatic charges consistently gave good results with rotenone concentrations as low as .1 per cent under laboratory conditions. But with our present knowledge, no attempt should be made to control the pea aphid in the field with mixed dusts containing less than .5 per cent rotenone, because much of the present dusting equipment is not necessarily adapted to produce consistent electrostatic charges.

Method of Procedure

Each dust was mixed in .25 gram samples by hand with mortar and pestle. The dust was applied with ten pounds pressure by means of a special duster. The complete dusting technique and description of apparatus used in these studies is being published in another paper. Pea plants approximately 6 to 7 inches high were used, and every plant was dusted separately inside a bell jar. The day before dusting each plant was infested with 20 wingless adult aphids; three plants of apparently the same age with 20 aphids were used per test. One-half gram of dust was used for each application. The percentage of kill was determined when the test had run 48 hours.

Experimental Data and Interpretation

Table 1 (above) shows comparative difference between Standard Talc and pyropyhllite. The important difference between the two is shown when oil was added to a 0.1 per cent rotenone mixed dust. For these, seven tests were made with three plants each, infested with approximately 20 adult wingless aphids. The highest kill in any test for Standard Talc with .1 per cent rotenone was 50 per cent—for pyrophyllite 100 per cent.

Table 1. A comparison between Standard Talc and Pyrophyllite with and without soybean oil and with .1, .5 and 1 per cent rotenone.

Diluent	*% Oil*	*% Rotenone*	*% Kill in 48 Hours*
Standard Talc	2 SBO	.10	23.2
Standard Talc	2 SBO	.50	58.0
Standard Talc	.....	1.0	42.5
Standard Talc	.....	.50	42.0
Pyrophyllite	2 SBO	.10	88.6
Pyrophyllite	2 SBO	.50	96.5
Pyrophyllite	.....	1.0	71.0
Pyrophyllite	.....	.50	31.5
Check	.....	0.	0.

It will be noted that there is not a very significant difference when oil is not added and the rotenone content is high. Differences are much more apparent when 2 per cent oil is added and the rotenone content is reduced. In the group of diluents which produced high electrostatic charges with oil, it was possible to reduce the rotenone content considerably without a proportionate loss of toxicity, under laboratory conditions.

The data for calcium carbonate buffered were quite variable and are not conclusive. It may be that the buffering material was responsible.

Summary

Frictional electrostatic charges are produced in the process of applying insecticidal dusts.

A study of the effect of electrostatic charges on the effectiveness of insecticidal dusts is being made.

When oil is added to dusts the electrostatic charge may be increased or decreased according to the diluent used.

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Table 2. A comparison of Standard Talc, one of the group of diluents which produced little charge when mixed with oil, and a group of diluents which produced high electrostatic charges when 2 per cent oil was added.

	Per cent Kill		*Diluent with 2% oil and variable rotenone content*			
	Diluent Alone	*Diluent + 1% rotenone*	.1%	.25%	.5%	.75%
Standard Talc	1.6	45.4	19.5	14	58.2	90
Gypsum Ben Franklin.....	5.	67.5	85	80	95	90
Calcium Carbonate Electro.....	3.5	70.	95	90	91	85
Calcium Carbonate Buffered....	8.5	50.6	85	80	70	89
Pyrophyllite (Pyrax ABB).....	1.7	73.1	95	94	93	90
Flaky talc	2	——	93	85	95.6	90

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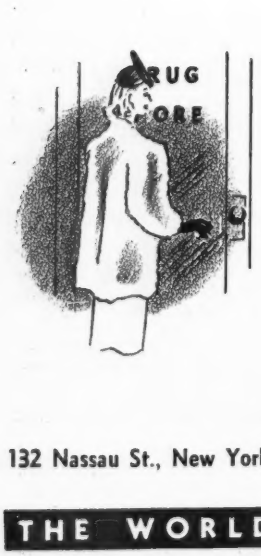

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PETROLEUM CRESYLIC ACIDS

A study of their toxicity and the toxicity of cresylic disinfectants

BY JOSEPHINE CAMPBELL*

A RECENT paper[1] has compared the properties of alkyl phenols (cresylic acids) from petroleum with those of the similar materials produced from coal-tar. It was pointed out there that the high-boiling petroleum derivatives, Shell 4020A Cresylic Acid and Shell 9035A Cresylic Acid, were valuable in the preparation of disinfectants because of their relatively high phenol-coefficients. The same paper summarized evidence that these high-boiling materials caused less skin-irritation and were in general less toxic than low-boiling alkyl phenols. The present paper describes at greater length experimental work on the physiological and antiseptic action of Shell Cresylic Acids and related materials.

This investigation includes tests on undiluted cresylic acids and phenols, and on disinfectants prepared from them. For convenience, a list of all the materials used, with reference numbers, is given in the appendix. The list includes descriptions or methods of preparation of most of the substances. Work was done on the following four phases of the toxicity of the materials under examination: toxicity of vapors; toxicity when taken by mouth; skin irritation; safety margin between concentrations having bactericidal properties and concentrations causing tissue damage.

Toxicity of Cresylic Acids when Inhaled: White mice were exposed to continuously renewed atmospheres saturated with the vapors of the following: Commercial Coal Tar Cresylic Acid (3); Shell 2000 Cresylic Acid (4); Shell 3500 Cresylic Acid (5); Shell 4020 Cresylic Acid (6); Shell 9035 Cresylic Acid (7); Shell Deodorized 9035 Cresylic Acid (10).

No deaths resulted from single five-hour exposures, but the coal tar cresylic acid and Shell acids 2000, 3500, and 9035 caused the deaths of a few individuals in groups that were exposed one hour a day up to ten consecutive days. The vapors of all the materials caused some irritation of the eyes and nose.

From this experiment, inhalation of cresylic acid vapors on a single occasion seems not to be dangerous, although repeated exposures should be avoided. Reasonably adequate ventilation should prevent dangerous exposures to the vapors of cresylic acids.

Toxicity of Cresylic Acids when Taken by Mouth: Eleven test materials, including a sample of linseed oil soap of the kind used in formulating commercial disinfectants, were dissolved in or emulsified with water. It was necessary to use acacia as an emulsifier for the cresylic acids and cresol, and acacia was also added to the phenol solution in order that all the active ingredients might be given in the same form. The solutions or emulsions were then introduced, by means of syringes with blunt tips, directly into the stomachs of white mice. Large and small doses were administered to different groups of animals, the doses being adjusted so that each test material caused group mortalities above and below 50 per cent. Dosage was then plotted against mortality and the dosage equivalent to a mortality of 50 per cent was estimated by interpolation.

The table that follows lists the phenols and disinfectants tested in two groups in order of decreasing

Material	*Dose to kill 50%*
Cresylic Acids	*g. per kg.*
Phenol U.S.P. (1)	0.45
Commercial Coal Tar Cresylic Acid (3)	0.5
Cresol, U.S.P. (2)	1.05
Shell 4020A Cresylic Acid (8)	1.2
Shell 9035A Cresylic Acid (9)	2.05
Disinfectants	
Commercial Soluble Cresylic Disinfectant (12)	*cc. per kg.* 0.7
Saponified Cresol Solution, U.S.P. (11)	0.95
Soluble 4020A Cresylic Disinfectant (14)	1.1
Soluble Cresylic Disinfectant prepared from No. 3 (13)	1.15
Emulsifiable 9035A Cresylic Disinfectant (15)	2.5
Soap	
Sodium-Potassium Linseed Oil Soap (16)	Non-toxic in amounts up to 5.0 cc. per kg.

* Summary of "The Antiseptic Efficiency of Certain Cresylic Materials," a thesis submitted in partial satisfaction of the requirements for the degree of Master of Science in Pharmacology in the Graduate Division of the University of California, 1940. The research was done with the assistance of the staff of the Shell Development Co., Emeryville, Calif.

[1] D. B. Luten, F. A. Bent, and M. L. Griffin, *Soap*, January 1940, p. 97.

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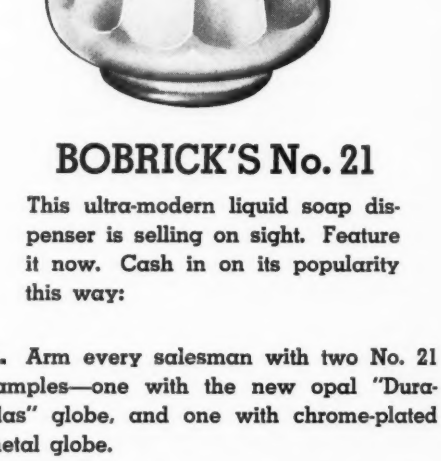

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toxicity; the criterion of toxicity being the dose (quantity of undiluted material per kilogram of body weight) which caused 50 per cent mortality.

It is evident that the high-boiling cresylic acids are less toxic when taken by mouth than the low-boiling materials. This relation holds in general in the case of disinfectants prepared from the cresylic acids. Shell 9035A Cresylic Acid is seen to be markedly less toxic than any of the other phenols tested.

Skin Irritation: The skin irritation produced in rats by nine materials was compared by the following procedure: The fur was removed from the abdominal skin of the rat with the aid of an electric clipper. A piece of gauze 1.0 sq. cm. in area was then wetted with a measured amount of the agent and applied to the animal's skin. This was immediately covered with a large piece of adhesive plaster. One hour later the plaster and gauze were removed and the area washed. This technique prevents the loss of the material through evaporation; the animal is not able to lick the area and thus confuse the results; and the exact time of contact with the agent is known. If the action appeared insignificant only two rats were used, but if significant action was observed three animals were used. In one doubtful case six animals were tested. If the animals survived the first application the same amount was applied again on the following day and the rats kept under observation for a week.

The differences in the action of the various agents were of degree rather than kind. The extreme variation in individual response prevents the calculation of the threshold of danger for these materials. Likewise, comparison of the individual materials is impossible, but a separation into two groups has been made on the basis of the severity of systemic poisoning following the application of 1.0 cc./kg.

Group I. The following materials are absorbed through the skin quickly enough and in large enough amounts to cause convulsions and death: Commercial Coal Tar Cresylic Acid (3); Soluble Cresylic Disinfectant prepared from No. 3 (13); Commercial Soluble Cresylic Disinfectant (12); U.S.P. Saponified Cresol Solution (11).

In most cases these materials caused faster and shallower breathing, followed by convulsions and often by death. The convulsions began 5 to 30 minutes after the application and, in one case, lasted more than 4 hours. If death did not result in a few hours the convulsions disappeared and the animals were practically normal by the following day. For the next three to four days the rats seemed normal except that they were rather quiet and their fur seemed ruffled.

When the plaster and gauze were removed the skin was found to be discolored. The color varied from reddish-brown to dark bluish-brown. The discolored area exceeded the size of the gauze (probably as a result of seepage) and its borders were bluish. Occasionally there was some induration of the area. The discoloration persisted until the skin sloughed off about a week later.

Some details of the effects of these materials are given in Table A below:

Group II. The following materials did not cause convulsions or other serious symptoms of systemic poisoning: Shell 4020A Cresylic Acid (8); Soluble 4020A Cresylic Disinfectant (14); Shell 9035A Cresylic Acid (9); Emulsifiable 9035A Cresylic Disinfectant (15); Sodium-Potassium Linseed Oil Soap (16).

For a few days following the application of these materials the animals seemed somewhat more quiet than normal, but this is probably not significant. The skin reaction to these materials was variable but, in general, slight. In some cases no discoloration was present, and in an occasional animal a superficial erosion occurred. In no case was the affected area greater than the size of the gauze.

The sodium-potassium linseed oil soap was applied both undiluted and as a 40 per cent solution. One animal died in convulsions about one hour after application of the soap. In this case the plaster accidentally came off after ten minutes and the animal apparently licked off the soap. Thus this death is not due to the effects of the material on the skin. Five other rats survived two applications, with no symptoms but a slight erosion of the superficial epithelium.

The materials in Group I are potentially dangerous; spilling and contact with the skin should be avoided. Those in Group II are, relatively speaking, not dangerous on contact with the skin; however, in the case of skin contact with any of these materials, particularly those of Group I, the parts affected should be

Table A

Material	*Amount cc./kg.*	*Times applied*	*Skin reaction*	*Systemic action*
Commercial Coal Tar Cresylic Acid. (3)	2.0	1	Slight	Death within 1 hr.
	1.0	2	Strong	Convulsions.
	1.0	1	Slight	Death within 1 hr.
Soluble Cresylic Disinfectant prepared from No. 3. (13)	2.25	2	Moderate	Convulsions first time but not second.
	1.0	2	Moderate	Convulsions both times; death after second.
	1.0	1	Moderate	Death within 30 minutes.
Commercial Soluble Cresylic Disinfectant (12)	3.5	1	Moderate	Death within 2 hrs.
	1.0	2	Moderate	Death within 2 hrs. after second.
	1.0	2	Moderate	Convulsions both times; death 20 hrs. after second.
U.S.P. Saponified Cresol Solution. (11)	1.7	1	Strong	Death within 90 minutes.
	1.0	2	Strong	Convulsions.
	1.0	2	Strong	Convulsions.

promptly washed with plenty of soap and water. (These statements are in the nature of a general characterization; however, the skins of individuals vary in susceptibility to irritation or allergical differences, hence no absolute rule for the skin effects of the materials under discussion can be established.)

It must be remembered that none of the experiments described in the preceding sections were made on men. The results of investigations on white mice, rats and rabbits are not necessarily applicable to men; however, it is reasonable to assume that compounds dangerous to the test animals will be somewhat dangerous to men. It is improbable that the dose-effect relationships will be the same.

Antiseptic Safety Margin: If a disinfectant kills or inhibits the growth of bacteria at concentrations which are not harmful to living tissues, the disinfectant may be said to have a safety margin which might make it clinically useful for antisepsis; it could reasonably be assumed that the preparation in the proper concentration would kill invading bacteria without injury to the body tissues. The greater the difference between the lowest concentrations killing bacteria and those injuring tissue-cultures, as found in test-tube experiments, the better the possibility of clinical usefulness for the antiseptic agent in the antisepsis of mucous membranes.

The safety margins of five cresylic disinfectants were determined, embryonic chick heart being the living tissue used in the comparison. A summary of the results of these experiments is shown in the accompanying table, but the experimental method is only sketched here. The reader is referred to original sources[2] for the details of the technique.

The lowest concentrations at which the disinfectants were bactericidal were determined by exposing cultures of *Staph. aureus* and *Bact. coli* to dilute solutions of the disinfectants for 10-, 20-, and 30-minute periods, transferring them to broth media, and incubating at 37° C. for 48 hours; the effect of a treatment on a culture was judged by whether or not growth had occurred during the incubation-period. To find the highest concentrations at which the disinfectants did not inhibit the growth of living chick-heart tissue, cultures of tissue were exposed in a somewhat similar way. The exposure-period was 24 hours, however, and the cultures were examined after 24 hours' incubation.

The table (following page) summarizes results of hundreds of experiments; each symbol represents an average of several individual results. The growth of bacteria-cultures during the incubation-period is indicated by (+); no growth, by (—). The latter symbol thus includes the cases in which the organisms decreased or were killed; no distinction is made here between inability to multiply and actual death of the organisms. For the chick-heart tissue cultures, (N) indicates normal growth (as compared with a control) in the incubation-period; (I) indicates inhibited growth; (O), no growth whatever, i.e., complete inhibition. The many degrees of inhibition classifiable under (I) are discussed more fully in the appendix; no differentiation is made in the table, but for estimation it can be remembered that within the range where there is inhibition the rate of growth will be slower, the higher the concentration of disinfectant.

A disinfectant that approached the ideal as judged by these experiments would show columns of (—) symbols all the way down to the lowest concentrations and a series of (N) symbols up to the highest concentrations; this would mean that it killed organisms at low concentrations but did not affect tissue at high concentrations; in other words, that it had a wide margin of safety. Among the disinfectants actually tested, all killed both organisms and tissue at 1.0 per cent concentration, but only two killed any organisms at a concentration of 0.1 per cent, and only one had no effect on tissue at the latter concentration. The data show a trend which indicates that the germicidal powers of the disinfectants increase with increasing molecular weight of the cresylic acids they contain. Furthermore, the safety margins become less negative; however, a positive margin of safety was reached only in the case of the highest boiling acid. Thus, disinfectant 9035A (15) at 0.08 per cent concentration stopped the growth of both organisms in 10 minutes, and at 0.1 per cent concentration did not inhibit the growth of chick-heart tissue in 24 hours. The remaining materials all caused some inhibition of growth of tissue even at concentrations at which the microorganisms survived most of the exposures used. Disinfectant 4020A (14) was second in effectiveness against microorganisms, with slightly higher bactericidal power than the commercial cresylic disinfectant (12), and several times the bactericidal power of U.S.P. saponified cresol solution or the disinfectant prepared from commercial coal-tar cresylic acid (13).

Under the conditions of the tests, disinfectant 9035A at concentrations between 0.1 per cent and 0.05 per cent is bactericidal at exposures of 20 minutes or longer, but does not kill living tissue. Hence this disinfectant gives definitely greater promise of clinical usefulness than the other substances used, none of which were non-injurious to tissue in concentrations that had equivalent bactericidal effect.

Summary: No essential differences in toxicity of the vapors of cresylic acids of various types were observed. However, the higher-boiling petroleum cresylic materials were less toxic when ingested, and less irritant to the skin, than low-boiling cresylic materials. Furthermore, a disinfectant prepared from a high-boiling petroleum cresylic acid was bactericidal at concentrations non-injurious to living chick-heart tissue.

[2] C. Handley, N. M. Phatak and C. D. Leake, "The Antiseptic Efficiency of Certain Benzene and Furan Mercurials," Univ. Calif. Publ. Pharmacology, 1:175-186, 1939.
J. Campbell, "The Antiseptic Efficiency of Certain Cresylic Disinfectants" (Thesis, University of California, 1940).

This was not the case with similar disinfectants made from lower-boiling cresylic acids.

Description of Test Materials

Phenolic Substances

1. *Phenol,* U.S.P., conformed with the specifications of the U. S. Pharmacopoeia XI, page 285.

2. Cresol, U.S.P., conformed with the specifications of the U. S. Pharmacopoeia XI, page 132.

3. *Commercial Coal-Tar Cresylic Acid* was a domestic coal tar cresylic acid having the following properties:

Specific Gravity, 20/4°C..... 1,031
Distillation range,

I.B.P., °C.	195
Dry Pt., °C.	226
5% Pt., °C.	201
10% Pt., °C.	202
50% Pt., °C.	205
90% Pt., °C.	215
95% Pt., °C.	220

4, 5, 6, and 7. *Shell* 2000, 3500, 4020, *and* 9035 *Cresylic Acids* were samples from regular commercial production. Typical analytical data are given in the following table:

Shell Cresylic Acids

Specific Gravity,	*Grade* 2000	*Grade* 3500	*Grade* 4020	*Grade* 9035
20/4°C. ...	1.020	1.014	1.007	1.016
Distillation				
I.B.P., °C .	199	213	222	243
F.B.P., °C. .	225	240	241	291
5% Pt., °C.	204	214	224	245
10% Pt., °C.	205	217	225	248
50% Pt., °C.	209	222	227	257
90% Pt., °C.	215	231	234	278
95% Pt., °C.	219	236	238	288

8 *and* 9. *Shell* 4020A *and* 9035A *Cresylic Acids* were samples from regular commercial production. These materials are more refined than Cresylic Acids 4020 and 9035, but have about the same distillation range. Properties of the samples:

	Grade 4020A	*Grade* 9035A
Specific Gravity, 20/4°C.	1.004	1.012
Distillation range,		
I.B.P., °C.	223	245
Dry Pt., °C.	242	278
5% Pt., °C.....	224	249
10% Pt., °C.....	225	250
50% Pt., °C.....	227	256
90% Pt., °C.....	234	269
95% Pt., °C.....	238	277

10. *Shell Deodorized* 9035 *Cresylic Acid* was an experimental material, not commercially available, similar to Shell Cresylic Acid 9035 in boiling-range.

Disinfectant Preparations

11. *Saponified Cresol Solution, U.S.P.* was prepared from a commercial

TABLE B

Effects of Dilute Solutions of Cresylic Disinfectants on Micro-organisms and Chick-Heart Tissue

Disinfectant	*Culture exposed*	*Time of exposure*	*Concentration of Disinfectant (in per cent)* 1.0	0.5	0.4	0.3	0.2	0.1	0.08	0.05	0.03	0.01
U.S.P. saponified cresol solution (11)	S. aureus	10 min.	—	+				+		+		+
		20	—	—				+		+		+
		30	—	—				+		+		+
	B. coli	10	—	+				+		+		+
		20	—	+				+		+		+
		30	—	+				+		+		+
	Chick-heart	24 hrs.	(O)	(O)				(I)		(I)		(I)
Soluble disinfectant prepared from coal tar cresylic acid (13)	S. aureus	10 min.	—	+				+		+		+
		20	—	—				+		+		+
		30	—	—				+		+		+
	B. coli	10	—	+				+		+		+
		20	—	+				+		+		+
		30	—	+				+		+		+
	Chick-heart	24 hrs.	(O)	(O)				(I)		(N)		(N)
Commercial soluble cresylic disinfectant (12)	S. aureus	10 min.	—	—	—	+	+	+		+		+
		20	—	—	—	—	+	+		+		+
		30	—	—	—	—	—	+		+		+
	B. coli	10	—	—	+	+	+	+		+		+
		20	—	—	—	—	+	+		+		+
		30	—	—	—	—	+	+		+		+
	Chick-heart	24 hrs.	(O)	(O)				(I)		(I)		(I)
Soluble 4020A cresylic disinfectant (14)	S. aureus	10 min.	—	—	—	—	+	+		+		+
		20	—	—	—	—	—	—		+		+
		30	—	—	—	—	—	—		+		+
	B. coli	10	—	—	—	—	—	+		+		+
		20	—	—	—	—	—	+		+		+
		30	—	—	—	—	—	+		+		+
	Chick-heart	24 hrs.	(O)	(O)				(I)		(N)		(N)
Emulsifiable 9035A cresylic disinfectant (15)	S. aureus	10 min.	—	—				—	—	+	+	+
		20	—	—				—	—	—	+	+
		30	—	—				—	—	—	—	+
	B. coli	10	—	—				—	—	+	+	+
		20	—	—				—	—	—	+	+
		30	—	—				—	—	—	+	+
	Chick-heart	24 hrs.	(O)	(I)				(N)	(N)	(N)	(N)	(N)

U.S.P. Cresol in accordance with the formula for U.S.P. saponified cresol solution given in the U. S. Pharmacopoeia XI, page 206.

12. *Commercial Soluble Cresylic Disinfectant* was a nationally known soluble cresylic disinfectant. Analysis of it has indicated the following composition:

Cresylic Acid, % by wt.	58
Distillation range of cresylic acid,	
I.B.P., °C.	194.8
5% Pt., °C.	197.8
10% Pt., °C.	198.8
50% Pt., °C.	203.7
90% Pt., °C.	217.0
95% Pt., °C.	223.5
F.B.P., °C.	227.5
Soap Content, % by wt. (dry basis)	30.5
Kind of Soap	Potassium-Cocoanut Oil
Inert Material, including water, glycerine, etc., % by wt.	11.5

13. *Soluble Disinfectant Prepared from No.* 3 was prepared similarly to No. 11 except that material No. 3 was used in place of U.S.P. Cresol.

14. *Soluble* 4020A *Cresylic Disinfectant* was prepared in accordance with the following formula:

	% by wt.
Shell 4020A Cresylic Acid	51
Sodium-Potassium Linseed Oil Soap	38
Isopropyl Alcohol	11

This material conformed to the Commercial Standards Specifications CS71-38 in all respects with the exception of the source of the cresylic acid, which was petroleum instead of coal tar. Phenol coefficients determined in accordance with the F.D.A. method by an independent laboratory on this disinfectant have been reported as follows:

	% by wt.
Against E. typhi	8.3
Against Staph. aureus	7.3

15. *Emulsifiable* 9035A *Cresylic Disinfectant* was prepared in accordance with the following formula:

	% by wt.
Shell 9035A Cresylic Acid	70
Sodium-Potassium Linseed Oil Soap	25
Isopropyl Alcohol	5

This material conformed to the Commercial Standards Specifications CS70-38 for coal tar disinfectants (emulsifiable type) in all respects with the exception of the source of the cresylic acid (or tar acid oils), which was petroleum instead of coal tar. Phenol coefficients made in accordance with the F.D.A. method by an independent

(*Turn To Page* 121)

Examples of Inhibition of Growth of Living Chick-heart Tissue by Dilute Cresylic Disinfectants.

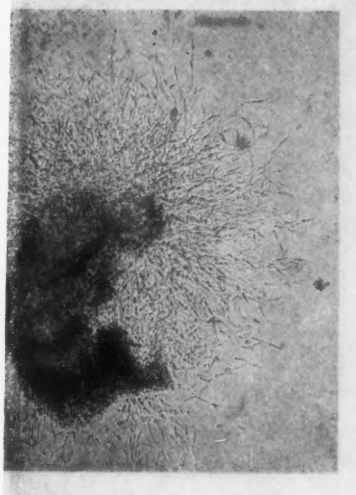

Figure 1.
Normal Growth

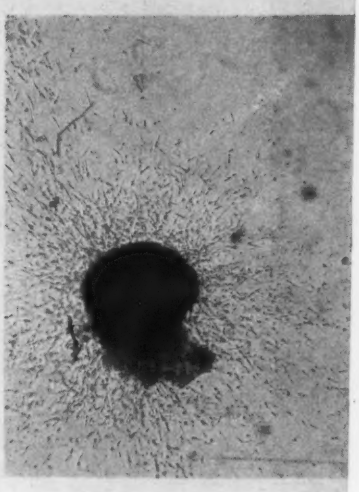

Figure 2.
Moderate Inhibition

Figure 3.
Strong Inhibition

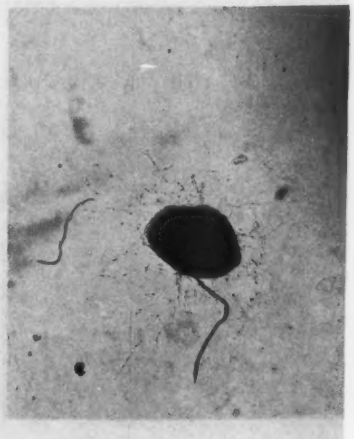

Figure 4.
Drastic Inhibition

Inhibition of Growth of Chick-heart Tissue: Each of the photomicrographs above shows a dark mass of tissue surrounded by new cells in varying numbers, the new growth having taken place in the same time-interval in each case. Figure 1 illustrates normal growth (N) as shown by a control culture. The other three figures show varying degrees of inhibition caused by exposure to disinfectant solutions.

The degrees of inhibition of which these three examples are typical are included under the symbol (I) in Table B. In complete inhibition of growth (0), a photomicrograph shows only the dark mass of the original tissue, with no new cells whatever around it.

As pointed out, no attempt has been made to indicate degree of inhibition in the table.

Poison for Meadow Mice

Barium acid arsenate and barium sodium arsenate were used under field and laboratory conditions for the control of meadow mice. When used in bread, paste or pills, these substances are much more poisonous than the commonly used baits with disodium arsenite. The lethal dose for meadow mice is 0.002-0.003 gram. Small pills made from five grams of wheat flour, 50 per cent of bran, one part of sugar and one part of poison are recommended. This poison is more readily taken in baits, is less poisonous to other animals, and is much less expensive than commonly used poisons. B. Yu. Fal'-kenshtein. Plant Protection (U. S. S. R.) **1939,** No. 19, 29-36; through *Chem. Abs.*

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Pyrethrin I Extraction

A simple and inexpensive modification of an apparatus for the extraction and determination of pyrethrin I in ground pyrethrum flowers reduces the loss of petroleum ether used for extraction and eliminates transfer of the extracted and subsequently refluxed solution to a larger container for alcohol removal. An Allihn condenser is modified by the insertion of a cold-water column within the condenser, thus making a double condenser, with the solvent between the two, all with ground-glass joints. As a receiving flask, a 500-cc. Kjeldahl flask with the same size of interchangeable ground-glass joints as in the rest of the apparatus, is used. The loss of ether and the volume required for extraction have been thus reduced approximately 50 and 33 per cent respectively, resulting in greater economy and elimination of a health hazard in the excessive escape of fumes of a highly volatile solvent. Jethro S. Yip. *Ind. Eng. Chem.*, Anal. Ed. **13,** 107-8 (1941).

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Assay of Disinfectants

A collaborative study of the determination of phenol coefficient of liq. cresolis saponatus, pine-oil emulsion and coal-tar emulsions, by the A.O.A.C. method showed very close agreement and indicated the dependability of the test. C. M. Brewer. *J. Assoc. Official Agr. Chem.* **23,** 557-8 (1940).

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Cresol Disinfectant

Cresol disinfectant is reported prepared according to the following proportions:

Cresol	500 gms.
Sodium oleate or sodium stearate	240 gms.
Distilled water, to make	1000 cc.

Dissolve the soap in the cresol, to which about 200 cc. of distilled water have been added. Heat with constant stirring to about 65° C. and maintain this temperature until solution is complete. Cool, add the remainder of the water to make 1000 cc. and mix. This takes about five minutes to prepare.

Gelatinization did not occur in any of the solutions made by this formula. The initial color of the solution, light amber, may darken unless the product is well protected from light. A saponated solution of cresol made according to the revised formula contains approximately 49 per cent of cresol; that by the present official formula 46 per cent. L. F. Martin and W. A. Prout. *J. Am. Pharm. Assoc.* **29,** 327-9 (1940).

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Insecticide Protection

Derris, pyrethrum and cube insecticidal materials are coated with a light reflecting pigment which inhibits the loss of the toxic principles when exposed to light. The light-reflecting substances particularly applicable as ingredients of commercial insecticides are titanium containing compounds such as titanium oxide, a formula being:

	Per Cent
5% rotenone bearing root, ground	15
Pyrethrum powder	25
Titanium oxide base pigment	12
Kaolin or other inert material	63-73

The titanium oxide base pigment consists primarily of titanium oxide in combination with barium sulfate or a calcium base, although titanium oxide alone may be employed. Hammond Paint and Chemical Co., Inc. U. S. Patent No. 2,168,064.

Mildew Prevention

To protect fabrics from mold and mildew various types of germicides have been used, both inorganic and organic. Minimum amounts required to protect a fiber under standardized conditions have been determined as follows:

Inorganic	*Per cent*
Ammonium fluoride	0.04
Borax	0.9
Mercuric chloride	0.02
Sodium fluoride	0.8
Sodium silicofluoride	0.15
Thallium carbonate	0.02
Zinc chloride	0.8

Organic	*Per cent*
Benzoic acid	0.05
Cresylic acid	0.1
Dinitrophenol	0.02
Formaldehyde	0.05
Pentachlorophenol	0.014
Phenol	0.13
Salicyl anilide	0.025
Thymol	0.04
Phenyl mercuric nitrate	0.01

The chemical used should not evaporate, inorganic compounds being best in this property,—and should be only slightly soluble in water, organic compounds being best in this property. H. Wardle. *Textile Colorist* **62,** 809-12 (1940).

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Sources of Insecticides

Sources of plant insecticides in the British Empire have been studied. Analyses of derris from Tanganyika (9 samples), Sarawak (3), Seychelles (7), Mauritius (1), Trinidad (5), Dominica (3), and Fiji (2) showed water 4.5-10.6 per cent, total extract 3.3-22.6 per cent and purified rotenone 0.6-9.95 per cent.

The alcoholic extracts of 3 samples of leaves of Tephrosia from Uganda gave positive biological tests for insecticidal properties, 100 per cent of paralyzed insects being obtained at a concentration of 0.5 gram of leaf per 100 cc. A sample of roots from the Union of South Africa contained 1 per cent of ether extract and only a trace of rotenone.

Samples of pyrethrum from Tanganyika (15 samples), St. Helena (2), and Ceylon (2) contained water 7.0-10.7 per cent, pyrethrin I 0.05-0.64, pyrethrin II 0.05-0.80, and total pyrethrins 0.10-1.40 per cent. *Bull. Imp. Inst.* **38,** 150-63 (1940); through *Chem. Abs.*

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NEWS...

Forms Webb Supply Co.

Webb Darling, formerly connected with Franklin Resarch Co., Philadelphia, as representative in the Chicago territory, recently established Webb Supply Co., in Jackson, Mich., dealing in janitors' supplies and school equipment.

Offer Refrigerator Conditioner

American Products Company, Cincinnati, manufacturers of "Veeco" products, has introduced "Aer-Aid," as a new conditioner for ice boxes and refrigerators. It combines a deodorizer with an accurate refrigerator thermometer. According to the makers, "Aer-Aid" keeps foods, ice cubes, frozen desserts, etc., from being affected by the odors and flavors of other foods in the ice box or refrigerator, and the attached thermometer indicates the temperature and makes control possible at all times.

McCormick on Hospital Board

Charles P. McCormick, president of McCormick & Co., Baltimore, was recently appointed a member of the board of managers of the Springfield State Hospital. He succeeds C. Wilbur Miller, formerly president of Davison Chemical Co.

Spray Co. Buys Foodndrink Co.

Garden Hose Spray Co., Cambridge, Mass., recently purchased the trade names, good will and other assets of Foodndrink Fertilizer Co., same city.

Forms Parker Products Co.

T. A. Parker, formerly connected with West Disinfecting Co., Long Island City, N. Y., as district sales manager in Birmingham, Ala., recently left the West company to form his own business, Parker Products Co., manufacturer and distributor of janitor supplies, in Birmingham. During his 18-year connection with West Disinfecting, Mr. Parker supervised sales in the southern and

T. A. PARKER

southeastern states, having been located at Richmond until he was transferred to Birmingham in 1927. Mr. Parker's present sales organization includes G. F. Cotton, formerly with Janitors Supply House, Baltimore, and F. W. Roberts, a former representative of West.

A. J. Lehrman & Sons Move

A. J. Lehrman & Sons, janitors' supplies, Harrisburg, Penna., have recently moved to a larger and more modern warehouse at 122 S. Cameron St.

Hold Chicago Hotel Show

Chicago's annual Midwest Hotel Show, March 3 to 7, attracted only two manufacturers of sanitary cleaning chemicals and cleaning equipment this year. System Products Co., Chicago, demonstrated in their booth their "Kleen-rite" cleaning products and appliances for cleaning rugs, carpets and upholstery, including a new hand machine for carpet shampoo. Among the sanitary compounds shown were disinfectants, moth and fly sprays, cedar and metal polishes, liquid and dry cleaners, terrazo cleaner and other items. E. A. Pape, vice president, was in charge of the promotional work.

Hild Floor Machine Co., Chicago, showed a new noiseless vacuum machine for shampooing upholstery and floor coverings on the floor. Cleaning preparations for use with the equipment included rug and upholstery shampoo soaps, a spotting compound and "Dog-Tex" for removing stains left on rugs by domestic pets. Fred C. Hild, head of the company, was assisted by Mrs. Hild as hostess at their booth.

Hysan Issues Jobber Catalog

Hysan Products Co., Chicago, manufacturer of sanitary products for jobbers, has just issued its 1941 catalog which describes and illustrates its line of products for the jobbing trade. A section of the book describes the sales helps, labels, folders, etc., that are available.

Zonite Shows 1940 Profit

Net earnings of Zonite Products Corp. and subsidiaries for 1940 were $114,606, or 14 cents per common share, as compared with a net loss of $26,903 in 1939.

"Rat Kill" Stipulation

H. B. Smith, trading as Smith Products, Council Bluffs, Iowa, recently stipulated with the Federal Trade Commission that he will discontinue advertising that "Smith's Rat Kill" will stop destruction by rats, is a sure death for rats or will stop waste due to rats. He also agreed to stop representing that the preparation will be taken by rats under all baiting conditions and that it is approved by the United States Department of Agriculture.

Termites Aid in Swindle

A new racket in which imaginary "termites" play the role of innocent by-stander was recently worked on M. C. Mann of Miami, Florida. A woman appeared at Mann's home and said she wanted to

buy the house. A short time later, a man called, ostensibly an exterminator, and told Mann a woman interested in buying the house had engaged him to inspect it for termites. After a half hour passed beneath the house, the man crawled out and extracted $40 from Mann for exterminating a "nest of termites." Neither the "buyer" nor the "exterminator" returned. Curtain.

◆

Protests Wax Prices

The floor wax business is being damaged by poor quality waxes and low prices, according to a communication from the Excelsior Chemical Co., San Francisco, which states that an editorial commenting on prices for floor waxes which appeared in the last issue of *Soap & Sanitary Chemicals* should be given more attention by the trade. The letter goes on to say:

"Just the other day, I was talking to one of the large users of self-polishing wax. This man has been in offices of the company in different parts of the country, and he told me that the waxes that they purchased have changed so much that they finally had to go into the manufacture of their own wax so as to get a quality product. He also said that he has had over two hundred samples of wax furnished him which were supposed to pass P.W. 151 of the government and that none would pass.

"And when we look at the prices at which manufacturers are taking this government business, we wonder where they are getting their material. We manufacture products that we are proud to sell and on which we give a money back guarantee. We do not get any government business as we do not sell our product unless we can make a fair profit, nor do we guarantee our product to pass their specifications. But our business with those who should know floor wax (building maintenance companies and hardwood floor contractors) is on the increase, so we are glad to see our competitors go after this no-profit business."

◆

Forms Cleaning Products Co.

Jack Hackman recently formed National Cleaning Products Corp., in Columbus, Ohio, to manufacture and market "Dhobi," cleaning powder for walls and ceilings. Mr. Hackman was formerly in the advertising distribution business.

Bobrick in New L. A. Plant

After 35 years in one location, Bobrick Manufacturing Corp. has moved into a new and larger plant at 2619 Santa Fe Ave., Los Angeles. Latest modern equipment has been installed in the new Bobrick plant to provide expanded facilities for the manufacture of their complete line of soap dispensing equipment to which they will devote their entire attention from now on. Jobbers in the 11 western states will be supplied from the Pacific Coast plant. The New York office continues in its present location at 15 E. 26th St., and will handle business in the rest of the country as heretofore.

A. L. Bobrick, president, emphasizes that only the chemical manufacturing department has been sold

◆

Gerson-Stewart Coast Plant

Gerson-Stewart Corp., Cleveland, purchased the chemical department, including equipment, of the Bobrick Manufacturing Corp., Los Angeles, as of April 1st. The new western division will function as a separate unit known as the Gerson-Stewart Pacific Corp., and has leased the buildings formerly occupied by Bobrick at 111 South Garey Street, Los Angeles. Bobrick Manufacturing Corp. has moved to a new plant where they will devote their entire attention to the manufacture of soap dispensing equipment.

Dr. Edward S. Franzus, for many years chemist in the Gerson-Stewart Cleveland plant heads the new firm, with L. C. Moseley as sales manager. Mr. Moseley was formerly Southern California manager for Continental Car-Na-Var Corp. Gerson-Stewart Pacific Corp. will manufacture a complete line of soaps, disinfectants, floor treating compounds, and other sanitary chemicals, continuing with the same products now made in the Cleveland division and adding several new items.

Screwworm Threatens Livestock

Winter survival of an unusually large number of screwworms is a potential threat this year to livestock in many parts of the country, it was recently pointed out by the U. S. Department of Agriculture. The screwworm, which each year in the south and southwest kills livestock worth several million dollars, is a stage in the life cycle of an active green fly. The flies may lay eggs on any break in the skin of sheep, cattle, horses and hogs. From these eggs the worms hatch. If favorable weather conditions continue during the spring, a serious outbreak may be expected in late spring. Early treatment of all livestock wounds with diphenylamine is recommended by Dr. F. C. Bishopp, of the Bureau of Entomology and Plant Quarantine, to check multiplication of the pest.

◆

Liquidate Cap & Closure Corp.

Anchor Cap & Closure Corp., Long Island City, N. Y., was liquidated and dissolved last month, and all business, plants and property of the organization were acquired by Anchor Hocking Glass Corp., Lancaster, Ohio, as a move in simplifying and centralizing operations and control. The cap and closure corporation is now known as the Closure division of Anchor Hocking Glass Corp. At the same time, Anchor Cap & Closure Corp. of Canada, Ltd., Toronto, became a wholly owned subsidiary of Anchor Hocking Glass Corp.

◆

Bottle Washing Instrument

A recently developed instrument checks bottle washing solutions by indicating the concentration of the solutions, reading directly in terms of free caustic content. A dip cell is placed in the solution to be tested, the temperature knob set to the temperature of the solution, and the main knob turned until the "magic eye" shows the widest angle of dark segment. The conductivity of the solution is indicated by the pointer of the main knob in terms of per cent of free caustic or in other desired terms. The instrument is made by Industrial Instruments, Inc., Jersey City, N. J.

New Toilet Deodorizer

The Zoro Co., Chicago, has recently put on the market a new bathroom deodorizer which it will sell under the name "Snap-On." The deodorant blocks are specially designed to fit a two-piece aluminum holder.

N. Y. P.C.O.'s Meet

Ernest M. Mills, assistant district agent, division of predator and rodent control, fish and wildlife service, U. S. Department of the Interior, was guest speaker at the general meeting of the New York Pest Control Association, held March 11, in New York City. Mr. Mills led a discussion on pre-baiting, baits in general, formulas and potential killing expectations.

In the business meeting of the association, a series of amendments to Section No. 104 of the Sanitary Code of the Department of Health were recommended:

a) Prerequisites of application for owner-operators should be made far more strict in terms of requiring at least three to five years practical experience in household and structural pest control operations before one would even be granted the privilege of taking an examination to engage in the business of exterminating and fumigating.

b) Examinations that are to be given to applicants for owner-operator licenses should be materially strengthened so as to include not only written examinations but oral examinations as well as investigation of actual service work done by the applicants.

c) That there is to be no misunderstanding with regard to one claiming to engage in the business of exterminating and fumigating (pest control) and especially to avoid agency, solicitor, and other means that would suggest one being in the business of exterminating and fumigating, it is recommended that some ruling or provision be incorporated that would read along the following lines: "It is unlawful for any person to engage in the business of exterminating and fumigating, act in the capacity of, or advertise or assume to act as if engaged in the business unless he is licensed."

d) A clear cut ruling should be made with regard to household and structural services as to how anyone not licensed can perform such services. In other words, there is a strong contention that one should not be permitted to do exterminating work except in his own home and under no circumstances should he be privileged to engage in fumigating operations unless licensed.

e) One who has an owner-operators license and engages under a trade name or other corporate form must have a license certificate for each and every name under which he is operating.

DISINFECTANT MARKET

Poultry raising is one of the largest markets for disinfectants and insecticides in the United States and is potentially even larger. Watch for a complete article covering the products used in this important field in the May issue of SOAP & SANITARY CHEMICALS.

Congress Chemical Moves

Congress Chemical Co., floor waxes and metal polishes, formerly of 138 Court St., Brooklyn, N. Y., has just moved into larger quarters at 250 Plymouth St.

Prof. Exterminators Meet

The Professional Exterminators Association, of New York City, held its second monthly meeting of 1941, on March 10, at the Hotel Commodore. By-laws were read and adopted and plans were discussed for future meetings. Committees on Public Relations, Finance, and Membership were appointed. The Association meets again on April 7, at the Hotel Commodore, 8:15 p.m. Officers are: J. Finneman, Pest Control Corp., president; H. S. Bussell, Bussell Exterminating Co., vice-president; Wm. Farrell, Effective Exterminating Co., treasurer, and M. Oachs, Ozane Co., secretary.

Newark Health Officer Dies

Thomas Magrath, chief inspector of the fumigation division of the Newark, N. J., department of health, died recently at the age of 42 years. A well-known figure to pest control operators in the New York metropolitan area, he had been connected with the Newark health department for some 16 years.

Folder on Fly Knockdown

Rohm & Haas Co., Philadelphia, is currently distributing a new folder dealing with "Rate of Knockdown on Fly Sprays." The folder contains data pertinent to the question of the speed of action of commercial insecticide concentrates in paralyzing houseflies. Copies of the booklet are available through R & H branch offices.

Hits Dishwashing Practices

A recent survey of 21 cafes and restaurants in North Dakota, conducted by the state food commissioner, in which bacteriological samples were taken of 293 glasses, plates, forks, spoons, cups, rinse water and wash water, showed that such utensils are not being properly washed and sanitized and that many are carriers of excessive numbers of bacteria. Cultures made from these samples gave results as enumerated below, counts more than 100 per unit area being considered excessive.

Type utensil	*No. samples*	*No. exceeding tolerance*	*High bacteria count per area*
Plate	41	34	1,386
Cup	63	33	2,651,000
Glass	51	34	2,578,000
Spoon	63	10	1,890
Fork	63	12	630

Partial identification of the various types of bacteria that were found showed that the majority of the samples contained pathogenic bacteria and included such types as *Staphylococcus Aureus, Albus* and *Citrius*, and *Micrococcus Catarrhalis*. Other types of bacilli, not identified, but which may have been disease carriers, were found, as well as mold and spore-forming bacilli.

Such results were not unexpected, as unsanitary conditions were found in the majority of the restaurants visited.

Introduce New Floor Sweep

Frank Miller & Sons, Chicago, are introducing "No-Spot," a new type of floor sweeping compound for resilient floors, which is said to contain no oil, water or sand. According to the manufacturer, it has been thoroughly tested on all types of resilient floors. The product is to be sold through jobbers. Samples and descriptive literature are available thru the manufacturer.

Aid Chicago Rat Campaign

Chicago's Commissioner of Public Works, Oscar E. Hewitt, has enlisted a new ally in his campaign to rid the city of rats. After listening to a graphic recital of conditions at their March meeting, the Woman's City Club of Chicago voted to join in the fight with Mrs. Herbert Sidall, social and civic leader, to manage the campaign. A three-point plan was developed to include: (1) an educational drive to secure cooperation from property owners; (2) an effort to obtain from the Illinois Emergency Relief Commission supplies of poison bait and relief workers to place it; and (3) a pressure drive to get action from the City Council on a proposed rat-proofing ordinance which has been pending in committee since last July.

Cole Chemical Changes Name

Cole Chemical Corp., Long Island City, N. Y., effective March 1, changed its name to Cole Laboratories, Inc., to avoid any confusion with Cole Chemical Co., of St. Louis.

Parke, Davis Profits Down

Net profit of Parke, Davis & Co., Detroit, for 1940 was recently reported as $8,187,712, equal to $1.67 a capital share. For 1939 the company reported net earnings of $9,254,202, or $1.89 a share.

Study Sulfur as Insecticide

The Texas Gulf Sulphur Company has started a long range research program at the Boyce Thompson Institute for a study of fundamentals in use of sulfur as an insecticide and fungicide, according to a note in the News Letter of the National Farm Chemurgic Council.

"Rat-Bombs" Stipulation

The Federal Trade Commission recently accepted a stipulation from F. L. Wiley, trading as Oneida Chemical Co., Utica, N. Y., in which the company agrees to cease representing that "Rat-Bombs" or "Oneida Ratsirup" are effective in destroying mice other than common house mice; that the products are endorsed by the United States Department of Agriculture or that the products will make rats and mice go outside or underground to die, except in cases where their burrows are underground or outside of buildings.

Insecticidal Dusts

(*from Page* 101)

There is a definite indication that the degree of charge has a bearing on the effectiveness of the dust.

Dusts producing comparatively high charges generally give higher mortality than dusts producing low charges.

Pyrophyllite, flaky talcs, calcium carbonate, and gypsum produce comparatively high charges and give high mortality. The clays and other talcs studied produce low charges and give low mortality.

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Flint, W. P. and M. D. Farrar. 1932. The use of mineral oils for better dusts. Jour. Econ. Ent. 25 (2): 269-270.

Gray, K. W. and Joe Schuh. 1939. Pea aphid control experiments in Oregon conducted during 1939. Published in mimeograph form and presented at the pea aphid control conference at Columbus in December.

—— 1940. Pea aphid control experiments in Oregon. Jour. Econ. Ent. 33 (1): 72-77.

Moore, William. 1925. Electric-charge of arsenical particles. Jour. Econ. Ent. 18 (2): 282-286.

Trojan Markets New Cleaner

Trojan Products & Manufacturing Co., Chicago, sanitary products, have just put on the market a new cleaning compound, "Nu-Twist," for twist weave floor coverings, upholstery and furs. The new product, said to be instant drying, will be sold through jobbers.

Petroleum Cresylic Acids

(*from Page* 111)

laboratory on this disinfectant have been reported as follows:

	% by wt.
Against E. typhi	32.0
Against Staph. aureus....	24.6

16. *Sodium-Potassium Linseed Oil Soap* was prepared in accordance with formula given under U.S.P. Saponified Cresol Solution, U. S. Pharmacopoeia XI, page 206, which is as follows:

	Pts. by wt.
Solid C.P. NaOH (98.9%)	37.05
Solid C.P. KOH (85%)..	14.52
Distilled water	125.51
Linseed Oil	325.50

It was used in the preparation of all the disinfectants used in these tests excepting 12.

Fatty Acids as Insecticides

(*from Page* 98)

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(19) Shepard, H. H., 1939.—The Chemistry and Toxicology of Insecticides. Burgess Pub. Co., Minneapolis, Minn.

(20) Siegler, E. H. and Popenoe, C. H., 1925.—Some Insecticidal Properties of the Fatty Acid Series. J. Ag. Res. 29(5):259-261.

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(23) Tattersfield, F. and Gimingham, C. T., 1927.—Studie son Contact Insecticides. Part VI. The Insecticidal Action of the Fatty Acids, Their Methyl Esters and Sodium and Ammonium Salts. Ann. Appl. Biol. 14:331-358.

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CLASSIFIED ADVERTISING

Classified Advertising—All classified advertisements will be charged for at the rate of ten cents per word, $2.00 minimum, except those of individuals seeking employment where the rate is five cents per word, $1.00 minimum. Address all replies to Classified Advertisements with Box Number, care of *Soap*, 254 West 31st St., New York.

Positions Wanted

Chemical Engineer with sixteen years experience as chief chemist in soap and glycerine factory desires position as superintendent. Now employed. Address Box No. 113, care of *Soap*.

Trouble with Soap: Superfatting-Transparency? Expert will help you improve kettle-practice, formulae of any type soap and dry-mix-compounds. Analytical short-cuts and new ideas. Results guaranteed. Address Box No. 106, care *Soap*.

Chief Chemist with ten years experience in large-scale manufacture of soaps of all kinds, toilet, laundry, technical, glycerine recovery, laboratory research and analytical work desires a new connection. Address Box No. 114, care *Soap*.

Entomologist, Ph.D. 34. Specialty is insect toxicology. Five years experience with household insecticides. A new position offering opportunity for progress is desired. Address Box No. 104, care *Soap*.

Superintendent—Can make all kinds of soap, analyze and reproduce anything in soap line; also recovery of glycerine, and know rendering business. Address Box No. 108, care *Soap*.

Soap Maker and Chemist with many years' experience making all kinds of laundry and toilet soaps, seeking change. Good references. Can take complete charge of manufacturing. Address Box No. 111, care *Soap*.

Perfumer—Man with experience in Europe and U. S. and specialist in compounds, and with following in the trade, desires new connection with perfume materials house where he may exploit present contacts. Address Box No. 124, care *Soap*.

Soap Engineer—Native American, age 27. B.S. in Chemical Engineering, Armour Institute of Technology. Four years thorough basic training in control, research, development with large soap company. Seeking greater opportunities. Go anywhere. Address Box No. 119, care *Soap*.

Non-Alkaline Transparent scrub soaps and superneutral sulf. shampoo-toilet and shaving soap. Teach on kettle or lab. Progressive connection desired. Address Box No. 112, care *Soap.*

Positions Open

Southern manufacturer of soap powders, washing powders, scouring powders wants superintendent not subject to draft who is competent soap boiler. Give full details, experience, references, ideas as to salary. Address Box No. 105, care *Soap.*

Soap Assistant—Wanted, a young man with a few years experience in soap plant for position with manufacturer near New York. Give age, experience, salary wanted, education, and other details. Good opportunity for right man. Address Box No. 116, care of *Soap.*

Well Known Soap and Chemical Manufacturer is interested in the services of an experienced salesman to contact the institutional trade. Must have a definite acquaintance and following. References and bond required. Address Director of Personnel, Post Office Box No. 96, Station I, Cincinnati, Ohio.

Salesmen to sell soaps, cleaning compounds, waxes, polishes, etc. Write giving experiences. Renu Products, Inc., Whitestone, Long Island.

Salesman with following to call on janitor and restaurant supply houses and institutions with disinfectants, floor waxes, window cleaners, pine scrubs, sweeping compounds on commission basis. Address Box No. 115, care *Soap.*

Chemist-Soap Maker with chemistry training who understands manufacture of all types potash and soda soaps. Address Box No. 117, care of *Soap.*

Floor Waxes—Wanted by large established manufacturer a graduate chemist who has had several years experience in floor waxes and other floor materials. Give age, experience, and salary expected. Box No. 125, care *Soap.*

Miscellaneous

Manufacturers' Sales Representative covering the sanitary supply jobbers and converters in states west of Mississippi River desires to add suitable line. Address Box No. 118, care *Soap.*

Established Cincinnati firm would be interested in representing firms in position to offer raw materials used by soap manufacturers and other industries. Address Box No. 107, care *Soap.*

Say You Saw It in Soap!

THE average business house receives a great many inquiries for its products or services every year which cannot be attributed to any special source. A vast majority of these probably originate from some form of advertising but, due to the general tendency toward not mentioning the names of publications, cannot be directly traced.

When you write to anyone advertising in this publication, say you saw it in SOAP. The advertiser will appreciate it—and so will we!

The Publishers

Will Purchase Immediately—Pneumatic Packaging Machine, used for chips, powder, cleanser; also dry mixers, chip dryers, crutchers, and automatic soap press. Address Box No. 110, care *Soap*.

Floor Brushes—We manufacture a very complete line. Catalogue sent upon request. Flour City Brush Company, Minneapolis, Minn., or Pacific Coast Brush Co., Los Angeles, Calif.

Wanted—To purchase formula for manufacture of non-irritant soap product combining properties of skin protection and skin cleaning for industrial workers. For merchandising and sales exploitation by experienced sales executive. Address Box No. 109, care *Soap*.

Rebuilt Guaranteed Machinery: Crutchers; Plodders; Jones Automatic Soap Press; Foot Presses; Proctor Soap Dryer; 12x30, and 16x40 Three Roll Water Cooled Steel Mills; 2, 3, and 4 Roll Stone Mills; Johnson Carton Sealers; Powder Fillers and Mixers; Chippers; (vertical and horizontal) Mixers; Grinders; Boiling Kettles; Cutting Tables; Soap Frames; Filters and Filter Presses, etc. Send for Soap Bulletin No. 402. Stein Equipment Corp., 426 Broome St., New York City.

Classified Advertising

Brings excellent results at a minimum cost. Rates are only 10c per word with a minimum charge of $2 per issue (position wanted advertisements accepted at half rates). Whether you have some surplus equipment or material for sale, have a position open or are looking for a new connection, etc., use space in the Classified Section of *Soap*. It will place you in touch with the entire soap and sanitary chemical industry.

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RAW MATERIALS AND EQUIPMENT

NOTE: This is a classified list of the companies which advertise regularly in SOAP. It will aid you in locating advertisements of raw materials, bulk and private brand products, equipment, packaging materials, etc., in which you are particularly interested. Refer to the Index of Advertisements, page 133, for page numbers. *"Say you saw it in SOAP."*

ALKALIES

John A. Chew, Inc.
Columbia Chemical Div., Pittsburgh Plate Glass Co.
Diamond Alkali Co.
Dow Chemical Co.
Eastern Industries
Hooker Electrochemical Co.
Innis, Speiden & Co.
Michigan Alkali Co.
Niagara Alkali Co.
Solvay Sales Corp.
Jos. Turner & Co.
Warner Chemical Co.
Welch, Holme & Clark Co.

BULK AND PRIVATE BRAND PRODUCTS

Ampion Corporation (Soaps and Sanitary Chemicals)
Associated Chemists, Inc. (Insecticides)
Baird & McGuire, Inc. (Disinfectants)
Buckingham Wax Corp. (Wax Products)
Candy & Co. (Wax Products)
Chemical Mnfg. & Dist. Co. (Soaps and Sanitary Chemicals)
Chemical Supply Co. (Disinfectants, etc.)
Davies-Young Soap Co. (Soaps and Floor Wax)
Empire Chemical Products Co. (Wax Products)
Federal Varnish Co. (Wax Products)
Franklin Research Co. (Floor Products)
Fuld Bros. (Soaps and Sanitary Chemicals)
James Good, Inc. (Sanitary Chemicals)
R. M. Hollingshead Corp. (Soap and Sanitary Chemicals)
Hysan Products Co. (Sanitary Chemicals)
Koppers Co. (Disinfectants)
Kranich Soap Co. (Potash Soaps)
Pecks Products Co. (Soaps and Sanitary Chemicals)
Philadelphia Quartz Co. (Detergents)
Reilly Tar & Chem. Co. (Floor Seals)
Sweeping Compound Mfrs. Co. (Sweeping Compound)
Trojan Prods. Mfg. Co. (Rug and Upholstery Specialties)
Uncle Sam Chemical Co. (Sanitary Chemicals)
T. F. Washburn Co. (Wax Products)
White Tar Co. (Disinfectants, etc.)
Windsor Wax Co. (Wax Products)

CHEMICALS

American-British Chemical Supplies
Chemical Mfg. & Dist. Co.
John A. Chew, Inc.
Columbia Chemical Div., Pittsburgh Plate Glass Co.
Cowles Detergent Co.
Diamond Alkali Co.
Dow Chemical Co.
E. I. du Pont de Nemours & Co.
Eastern Industries
General Chemical Co.
Hooker Electrochemical Co.
Industrial Chemical Sales Div.
Innis, Speiden & Co.
Michigan Alkali Co.
Monsanto Chemical Co.
Niagara Alkali Co.
Philadelphia Quartz Co.
Rohm & Haas Co.
Reilly Tar & Chemical Corp.
Solvay Sales Corp.
Standard Silicate Co.
Jos. Turner & Co.
Victor Chemical Works
Warner Chemical Co.
Welch, Holme & Clark Co.

COAL TAR RAW MATERIALS
(Cresylic Acid, Tar Acid Oil, etc.)

American-British Chemical Supplies
Baird & McGuire, Inc.
Barrett Co.
Innis, Speiden & Co.
Koppers Co.
Mirvale Chemical Co.
Monsanto Chemical Co.
Pittsburgh Coal Carbonization Co.
Reilly Tar & Chemical Co.
White Tar Co.

COLORS

Fezandie & Sperrle
Interstate Color Co.
Pylam Products Co.
Tamms Silica Co.

CONTAINERS AND CLOSURES

American Can Co. (Tin and Fibre Cans, Steel Pails)
Anchor-Hocking Glass Corp. (Closures and Bottles)
Continental Can Co. (Tin Cans)
Crown Can Co. (Tin Cans and Steel Pails)
National Can Co. (Tin Cans)
Williams Sealing Corp. (Closures)

DEODORIZING BLOCK HOLDERS

Fuld Bros.
Hysan Products Co.

INSECTICIDES, SYNTHETIC

Associated Chemists, Inc.
Dodge & Olcott Co.
John Powell & Co.
Rohm & Haas Co.
U. S. Industrial Chem. Co.
Whitmire Research Corp.

MACHINERY

Anthony J. Fries (Soap Dies)
Blackmer Pump Co. (Pumps)
Houchin Machinery Co. (Soap Machinery)
Huber Machine Co. (Soap Machinery)
R. A. Jones & Co. (Automatic Soap Presses and Cartoning Machinery)
Karl Kiefer Machine Co. (Filling Machinery)
Koppers Company (Coal Tar Plants, Power Plants, Valves, Castings, Pipe, Tanks)
J. M. Lehmann Co. (Soap Machinery)

NOTE: This is a classified list of the companies whichadvertise regularly in SOAP. It will aid you in locating advertisements of raw materials, bulk and private brand products, equipment, packaging materials, etc., in which you are particularly interested. Refer to the Index of Advertisements, page 133, for page numbers. *"Say you saw it in SOAP."*

MACHINERY, (Contd.)

Proctor & Schwartz (Dryers)
C. G. Sargent's Sons Corp. (Dryers)
Sprout, Waldron & Co. (Mixing, Conveying, etc.)
Stokes & Smith Co. (Packaging Machy.)

MACHINERY, USED

Consolidated Products Co.
Brill Equipment Corp.
Newman Tallow & Soap Machinery Co.

MISCELLANEOUS

American Standard Mfg. Co. (Wax Applicator and Mops)
Anchor-Hocking Glass Corp. (Metal Caps)
Crosby Naval Stores, Inc. (Pine Oil and Rosin)
Dow Chemical Co. (Germicides, Agricultural Insecticides, Fumigants)
Filtrol Corp. (Purifying and Decolorizing Clay)
Industrial Chemical Sales Div. (Decol. carbon, Chalk)
Innis, Speiden & Co. (Fumigants)
Koppers Company (Coal, Coke, Roofing Materials)
Pennsylvania Refining Co. (White Oils)
Pylam Products Co. (Lathering Agent)
Reilly Tar & Chem. Co. (Preservatives)
Victoria Paper Mills Co. (Toilet Tissues)

OILS, FATS, AND FATTY ACIDS

Eastern Industries
Emery Industries, Inc.
Independent Manufacturing Co.
Industrial Chemical Sales Div.
Newman Tallow & Soap Machinery Co.
Orbis Products Corp. (Stearic Acid)
Welch, Holme & Clark Co.

PARADICHLORBENZENE

John A. Chew, Inc.
Dow Chemical Co.
E. I. du Pont de Nemours & Co.
Hooker Electrochemical Co.
Monsanto Chemical Co.
Niagara Alkali Co.
Solvay Sales Corp.
Jos. Turner & Co.

PERFUMING MATERIALS

American-British Chemical Supplies
Aromatic Products, Inc.
Compagnie Parento
Dodge & Olcott Co.
Dow Chemical Co.
P. R. Dreyer Inc.
E. I. Du Pont de Nemours & Co.
Felton Chemical Corp.
Firmenich & Co.
Fritzsche Brothers, Inc.
General Drug Co.
Givaudan-Delawanna, Inc.
Geo. Lueders & Co.
Magnus, Mabee & Reynard, Inc.
Monsanto Chemical Co.
Norda Essential Oil & Chemical Co.
Orbis Products Corp.
Ungerer & Co.
Van Ameringen-Haebler, Inc.
Albert Verley, Inc.

PETROLEUM PRODUCTS

Deodorized Insecticide Base, White Oils, Petrolatum, Paraffine Oils, Residues, etc.)

Atlantic Refining Co.
Pennsylvania Refining Co.
Shell Oil Co.
L. Sonneborn Sons, Inc.

PHOSPHATES

Trisodium, Sodium Pyrophosphate, etc.)

John A. Chew, Inc.
E. I. du Pont de Nemours & Co.
General Chemical Co.
Monsanto Chemical Works
Victor Chemical Works
Warner Chemical Co.

PYRETHRUM AND ROTENONE PRODUCTS

Insect Flowers and Powder, Pyrethrum Extract, Derris Products)

Associated Chemists, Inc.
Derris, Inc.
Dodge & Olcott Co.
S. B. Penick & Co.
R. J. Prentiss & Co.
McCormick & Co.
McLaughlin, Gormley, King Co.
John Powell & Co.

SILICATES

Cowles Detergent Co.
E. I. du Pont de Nemours & Co.
General Chemical Co.
Philadelphia Quartz Co.
Standard Silicate Co.

SOAP DISPENSERS

Ampion Corp.
Bobrick Mfg. Co.
Fuld Bros.

SPRAYERS

Breuer Electric Mfg. Co. (Electric)
Fumeral Co. (Pressure Sprayers, Steam, Air, CO_2 gas)

WAXES AND GUMS

Carnauba, Shellac, Candelilla, etc.)

Innis, Speiden & Co.
The Mac Lac Co. (Shellac)
Mantrose Corp. (Shellac)

PROFESSIONAL DIRECTORY

SKINNER & SHERMAN, INC.
246 Stuart Street Boston, Mass.
Bacteriologists and Chemists
Disinfectants tested for Phenol Coefficient. Toxicity Index determined by chick embryo method of Salle. Antiseptics tested by agar cup plate and other standard methods.
Chemical Analyses and Tests of All Kinds

STILLWELL AND GLADDING, Inc.
Analytical and Consulting Chemists
Members Association of
Consulting Chemists and Chemical Engineers
130 Cedar Street New York City

KILLING
strength of Insecticides
by PEET GRADY METHOD
PYRETHRINS in PYRETHRUM FLOWERS
(by Gnadinger or Seil Method)
We raised and killed more than 1 million flies in the last 2 years
ILLINOIS CHEMICAL LABORATORIES, INC.
GRIDLEY, ILLINOIS

FOSTER D. SNELL, INC.
Our staff of chemists, engineers and bacteriologists with laboratories for analysis, research, physical testing and bacteriology are prepared to render you
Every Form of Chemical Service
313 Washington Street Brooklyn, N. Y.

ALAN PORTER LEE, Inc.
Contracting and Consulting Engineers
Design and Construction of Equipment and Plants for Producing and Processing Fats, Oils, Soaps and Related Products
136 LIBERTY STREET, NEW YORK, N. Y.
Cable Address: "ALPORTLE", New York

CONSULTANTS
offering their services to manufacturers of soaps and sanitary specialties should apprise the industry of their facilities through this professional card department. SOAP reaches 4,000 firms needing help of a professional nature.

H. A. SEIL, Ph.D. E. B. PUTT, Ph.C., B.Sc.
SEIL, PUTT & RUSBY, INC.
Analytical and Consulting Chemists
Specialists in the Analysis of Organic Insecticides, Pyrethrum Flowers, Derris Root, Barbasco, or Cube Root—Their Concentrates and Finished Preparations
DRUGS — ESSENTIAL OILS — SOAP
16 East 34th Street, New York, N. Y.

Soaps • Waxes • Polishes
Detergents • Disinfectants
Analysis Research
Formula Development
HochstadterLaboratories
INCORPORATED
254 West 31st St. New York City

CONSULTANTS
offering their services to manufacturers of soaps and sanitary specialties should apprise the industry of their facilities through this professional card department. SOAP reaches 4,000 firms needing help of a professional nature.

Patents—Trade Marks
All cases submitted given personal attention
Form "Evidence of Conception" with instructions for use and "Schedule of Government and Attorneys' Fees"—Free
Lancaster, Allwine & Rommel
PATENT LAW OFFICES
Suite 402, Bowen Building Washington, D. C.

Refer To Your 1941
BLUE BOOK
for F.D.A. Method for Testing of Disinfectants and Antiseptics.
Official N.A.I.D.M. Method for Testing and Grading of Insecticides.
Free with a $3.00 subscription to SOAP.
$4.00 Foreign
MAC NAIR-DORLAND CO.
Publishers
254 W. 31st Street New York, N. Y.

Announcing . . .

THE 27th annual mid-year meeting of the National Association of Insecticide & Disinfectant Manufacturers to be held at the Edgewater Beach Hotel, Chicago, on June 9 and 10.

The new 1941 Official Test Insecticide to be available to all testing laboratories on and after May 20, 1941, for use in official testing of fly sprays from June 1, 1941 to May 30, 1942.

▼

National Association of Insecticide & Disinfectant Manufacturers, Inc.

110 East 42nd Street New York

OFFICERS

President . . . . . W. J. ZICK, Stanco, Inc., New York
First Vice-President . . . . . JOHN CURLETT, McCormick & Co., Baltimore
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P. B. HELLER . . . . . B. Heller & Co., Chicago
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Lehn & Fink Prods. Corp., Bloomfield, N. J.
WALLACE THOMAS . . . . . Gulf Oil Corp., Pittsburgh
R. H. YOUNG . . . . Davies-Young Soap Co., Dayton, O.

INDEX TO ADVERTISERS

* For further details see announcement in 1941 SOAP BLUE BOOK

Every effort is made to keep this index free of errors, but no responsibility is assumed for any omission.

Tale Ends

DID you see that movie where they used several tons of banannas as the lubricant on the ways at a ship launching in place of time-honored soap? Just another tradition shattered. Next thing we know, they will be christening ships by bouncing a bottle of cold lager beer off her prow in place of champagne. Economy has its price.

* * *

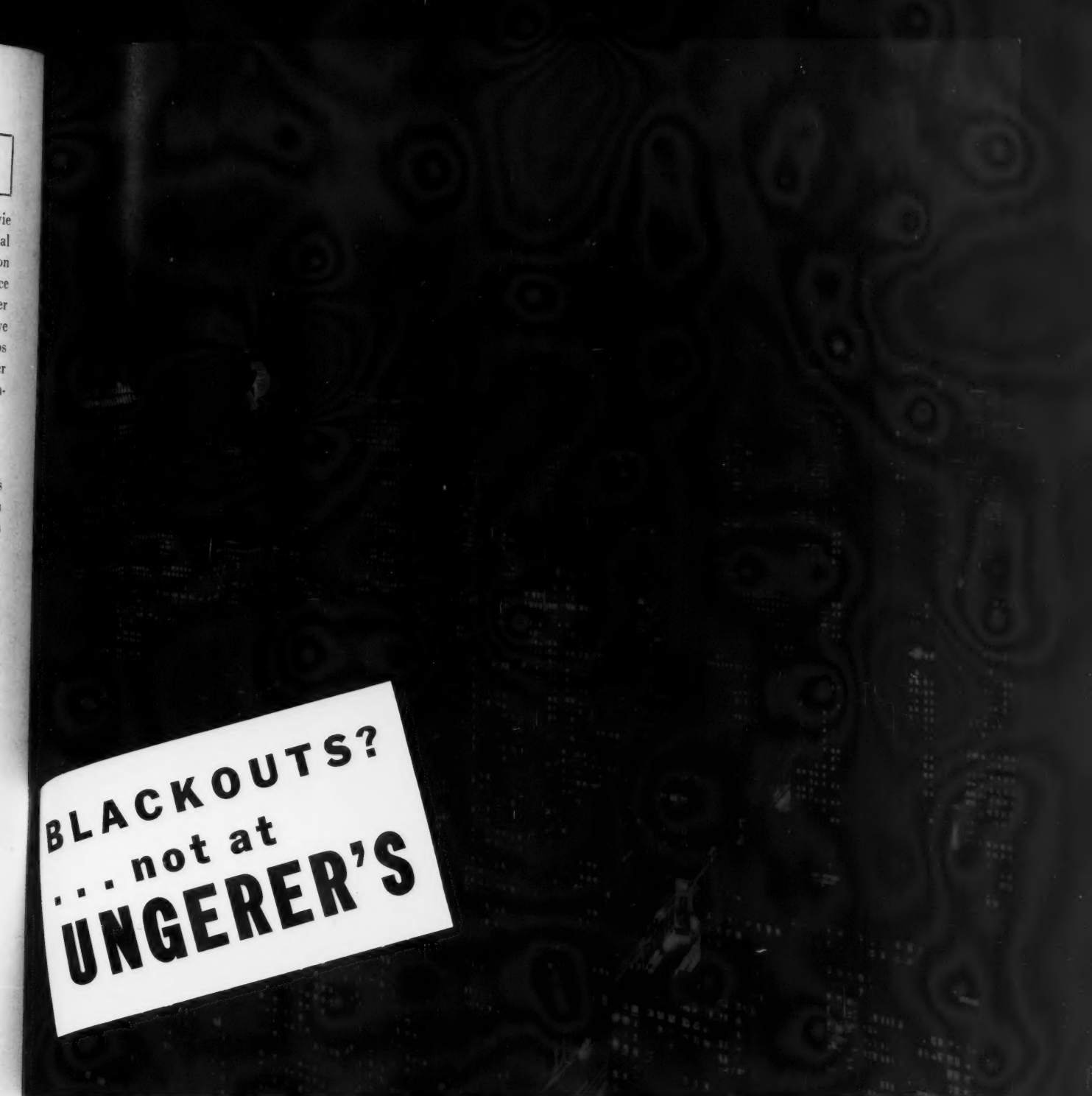
Soap from coffee beans makes the newspapers,—soap purer than castile, makes grimy, greasy hands as white as snow, kills perspiration, dandruff, lathers in hot, cold, or just plain water, four cakes from a pound of coffee, caffeine left in to give the soap "medicinal" qualities, contains also a very, very secret ingredient which makes the soap almost magic in action, has international and State Department angles in helping Brazil use up her excess coffee,—and the formula,—ah, the formula,—developed by a refugee Polish chemist after nine years work in an attic laboratory. Wanted: a sucker to put up the money to make and sell the stuff. Please form a line to the right and have your money ready!

* * *

Well, dear reader, the 1941 *Blue Book* is out! Did you get your copy of this biggest, best *Blue Book* ever published? If you have not received your copy, check up and see if your subscription is paid,—one copy free to every regular paid subscriber to *Soap & Sanitary Chemicals*.

* * *

Big complaint from soap buyers in Bogota, Colombia, who, it seems, found pictures of Hitler, Mussolini and Franco wrapped in packages of soap. Said soap buyers are reported to have suspected this to be the first step in Hitler's invasion of South America,—and forthwith called the police to have it stopped.



United Air Photo

The delicate problem of perfuming soap is no easy matter in peacetime. But now as various foreign sources of raw materials become endangered, restricted and blacked out, a genuinely serious problem threatens many soapmakers.

Ungerer customers, however, are hedging against the future by outlining such problems to us now, in full confidence.

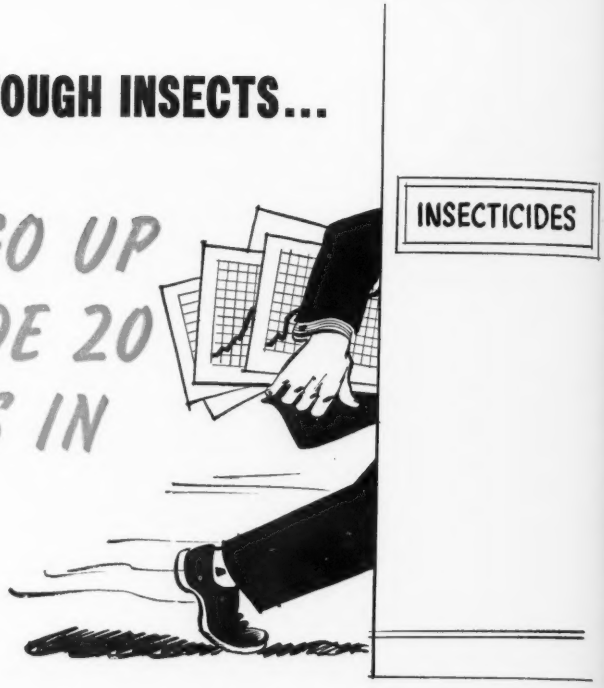
To substitute appears easy BUT the *correct substitute* is a matter for the unbiased expert. We offer you that expert service.

Lighten your entire perfuming problem by calling in Ungerer & Co.

UNGERER & CO.
13-15 WEST 20th STREET
NEW YORK

BECAUSE IT KILLS THE TOUGH INSECTS...

SALES CURVES GO UP WHEN PYROCIDE 20 GOES IN



The ability of your insecticide to kill the tough insects gives you the sales advantage of satisfied customers—increases your percentage of repeat sales that are all-important to the success of your product.

Many insecticides can do a good job on mosquitoes or flies, may win a Class AA rating, but the Peet Grady method, which measures effectiveness against flies, fails to show whether your insecticide is satisfactory against insects other than flies.

Your insecticide will kill the tough insects—roaches, moths, bedbugs and ants as well as flies and mosquitoes—if you use Pyrocide 20. *Your insecticide will kill quickly.*

Equally important to sales, your insecticide made from Pyrocide 20, Deodorized . . . Clarified, will be practically free from any odor, except for the pleasant floral aroma of pyrethrum flowers. Pyrocide 20, when diluted with deodorized base oil, makes an insecticide which has no unpleasant odor, no irritating sting to delicate membranes of nose or throat. Customers prefer this freedom from odor and irritation. This is an important advantage over insecticides made with substitutes or combinations of pyrethrum and pyrethrum-substitutes. One large manufacturer, using only pyrethrum, whose sales have increased substantially these last two years, considers this the most valuable property of pyrethrum. This manufacturer and many others who use pyrethrum exclusively increased their sales the last two years when other manufacturers complained of decreases in sales.

Today, Pyrocide 20—guaranteed to contain 2 grams of pyrethrins per 100cc. (Seil method)—is lower in cost! There is no longer any reason for using anything else. Write today for full information and low prices.*

*Pyrocide 20, Regular, the original chilled, filtered, standardized pyrethrum concentrate is offered at even lower prices than Pyrocide 20, Deodorized, Clarified.

McLAUGHLIN GORMLEY KING CO.
Minneapolis, Minnesota

PYROCIDE 20

THE PUREST FORM OF PYRETHRINS COMMERCIALLY AVAILABLE